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THE CLIPPER OF THE CLOUDS

The Fitzroy Edition of

JULES VERNE

Edited by I. O. Evans



A FLOATING CITY
THE BEGUM'S FORTUNE
FIVE WEEKS IN A BALLOON
DROPPED FROM THE CLOUDS
THE SECRET OF THE ISLAND
MICHAEL STROGOFF
THE DEMON OF CAWNPORE
TIGERS AND TRAITORS
FROM THE EARTH TO THE
MOON

ROUND THE MOON
INTO THE NIGER BEND
THE CITY IN THE SAHARA
20,000 LEAGUES UNDER THE
SEA

AT THE NORTH POLE
THE WILDERNESS OF ICE
THE MYSTERY OF ARTHUR
GORDON PYM

By Edgar Allan Poe and
Jules Verne

JOURNEY TO THE CENTRE
OF THE EARTH
PROPELLER ISLAND
FOR THE FLAG
BLACK DIAMONDS
THE MASTERLESS MAN
THE UNWILLING DICTATOR
THE CLAIM ON FORTY MILE
CREEK
FLOOD AND FLAME
THE CLIPPER OF THE CLOUDS
MASTER OF THE WORLD

THE CLIPPER OF THE CLOUDS

by
JULES VERNE

Edited by
I. O. EVANS
F.R.G.S.



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ACKNOWLEDGEMENTS

I AM INDEBTED to Dr R. C. Pankhurst, of the Aerodynamics Division, National Physical Laboratory, for comments on some aspects of Verne's *Albatross*. While pointing out that a number of small screws revolving at 'prodigious speed' would be far less efficient than a large-diameter screw turning more slowly, he explains:

'While Verne's *Albatross* foreshadowed the helicopter in its use of overhead rotors to provide sustentation throughout the flight, the employment of a large number of these lifting rotors arranged in longitudinal rows anticipated a principal feature in a very recent design of supersonic airliner. In this, a large number of light-weight, high-thrust jet engines pointing downwards are arranged in longitudinal rows and are used when required to provide the lift necessary to enable the aircraft to take off and land vertically and thus be independent of the long runways needed by modern high-speed aircraft. Verne's seventy-four rotor screws arranged in pairs, each consisting of left-handed and right-handed screws rotating in opposite directions, would today be described as thirty-seven "contra-rotating" propellers. Incidentally, his use of contra-rotation is interesting in itself, as a pair of screws rotating in opposite directions is inherently more efficient than a single screw of the same diameter.'

Here I should like to draw attention to the little-known but admirable Jules Verne Museum of Paris (le Palais de Paris, 32, rue Louis le Grand, 2me—near the Opéra). Among its other exhibits is a fascinating model of the *Albatross* cruising above impressive mountainous scenery.

INTRODUCTION

THOUGH THE original title of this work was *Robur le Conquérant*, that of its English translation is traditionally *The Clipper of the Clouds*, and there seems no reason for departing from this. So little is now heard of the explosive called Roburite that 'Robur the Conqueror' would be meaningless, and the modern equivalent 'Dyna the Mighty' would be far too atrocious a pun.

Moreover, the interest of the narrative lies not in the inventor but in the invention. Verne worked this out in some detail, and visualized its battle with the elements and the stirring episode in which it figures and which forms the book's climax. Much of the story is written round its achievements, consisting of vivid descriptions of the world's most striking scenery as viewed from the air.

When it came to weaving such themes into a story, however, Verne's creative powers seem to have failed him; possibly his publishers, delighted with so exciting an idea, were pressing for early delivery of the manuscript. For this reason, perhaps, he had to fall back on an attempt to recover the magic of his earlier triumphs. It is for the reader to decide how far he was successful, by comparing the Weldon Institute of Philadelphia with the Gun Club of Baltimore, Robur with Captain Nemo, and the respective flights across Africa of the helicopter *Albatross* and the balloon *Victoria*.¹

Little need be said about the characters in the story; Robur, indeed, is only too capable of speaking for himself. The unflattering and tasteless description of the Negro Frycollin does not imply that Verne was addicted to colour-prejudice. He may have not unreasonably felt that some humour was needed to relieve a story so fully loaded with didactic material.

'Uncle Prudent' was the family name of a relative of the youthful Verne, but little is recorded of him except that he had

¹ See *From the Earth to the Moon*; *Twenty Thousand Leagues Under the Sea*; and *Five Weeks in a Balloon*—all included in the Fitzroy Edition of Jules Verne.

been a seaman and was reputed to be a 'furious walker'—a somewhat ambiguous term which suggests that it may not have been only in name that he resembled the President of the Weldon Institute. 'I eat beefsteaks as hard as the soles of Uncle Prudent's boots,' Verne commented cheerfully, when he was an impecunious Bohemian in Paris.

The extraordinary acerbity shown by the major characters in the story is not characteristic of Verne, and probably reflects the controversies that helped to inspire it. Nowadays it is almost incredible that, even as late as the beginning of the century, what were then called 'flying machines' (as distinct from dirigible balloons) were thought to be impossible, and those who predicted them were ridiculed as cranks. (Though, for that matter, until quite recently a similar view was taken regarding the possibility of space travel.)

The whole narrative has an air of being reminiscent of this dispute between the advocates of the 'aerostat' (dirigible balloon) and the 'aeronef' (flying machine). Even the taunt about that 'blessed screw', that 'St Helix' (which in its unaspriated French form 'St Hélice' really has an hagiological sound) may have been hurled at the heads of those who put their faith in the helicopter. The flamboyant and dogmatic Robur, alternately boastful and secretive about his achievements, may well be a personification of the whole 'heavier than air' school of aeronautical thought. The more extreme members of the 'lighter than air' school, determined to close their eyes to obvious facts, may have suggested Uncle Prudent and Phil Evans, who, even after the striking demonstration they have received of the aeronef's power, still pin their faith to the aerostat.

The development of aeronautical science has settled the controversy. The aerostats, now called airships, still have their uses, but it is what Verne would have called the aeronefs, and are now known as aircraft, that are used for purposes of aerial navigation. In this, as in so many of his other forecasts, he has shown his remarkable powers of prescience.

CHAPTER I

In Which Wise and Ignorant are Equally Embarrassed

'BANG! BANG!

The two pistol-shots were almost simultaneous. A cow peacefully grazing fifty yards away received one of the bullets in her back. She had, however, nothing to do with the quarrel.

Neither of the adversaries had been hit.

Who were these two gentlemen? We do not know, though this would no doubt be an excellent opportunity to hand down their names to posterity. All we can say is that the elder was an Englishman and the younger an American.

As to stating where the inoffensive cow had just tasted her last tuft of herbage, nothing could be easier. It was on the right bank of the Niagara, not far from the suspension bridge which joins the American to the Canadian bank three miles below the falls.

The Englishman went up to the American. 'I still say it was "Rule Britannia"!'

'And I say it was "Yankee Doodle"! ' replied the other.

The dispute was about to recommence when one of the seconds — doubtless in the interests of the cattle — suggested: 'Suppose we say it was "Rule Doodle" as well as "Yankee Britannia", and go to lunch?'

The compromise between the national airs of the United States and Great Britain was adopted to the general satisfaction. American and English walked up the bank of the Niagara on their way to Goat Island, the neutral ground between the two falls. As they are now in the presence of the traditional boiled eggs and ham, the cold roast beef livened up with flaming hot pickles, and enough floods of tea to make the cataract jealous,

there's no need to worry about them. It is extremely unlikely that they will again appear in this story.

Which was right, the Englishman or the American? It would be hard to decide. Anyhow the duel shows how great was the excitement, not only in the new but also in the old world, regarding an inexplicable phenomenon which for a month 'or more had driven everybody to distraction.

. . . *Os sublime dedit coelumque tueri*¹

as Ovid said, for the greater honour of the human race. And, indeed, never had the sky been so much looked at since man had appeared on the terrestrial globe.

For just on the preceding night an aerial trumpet had blared its brazen notes across space just over that part of Canada between Lake Ontario and Lake Erie. Some people had heard 'Yankee Doodle', others 'Rule Britannia'. Hence the quarrel between the Anglo-Saxons, which ended with a lunch on Goat Island. Perhaps it was neither one nor the other of these patriotic tunes. What was undoubted by anyone was that this extraordinary sound had this peculiarity about it: it had seemed to descend from heaven to earth.

Did one have to believe in some celestial trumpet, placed to the lips of angel or archangel? Wasn't it more likely to be some joyous aeronauts playing this sonorous instrument, of which fame has made so resounding a use?

No! Here was neither balloon nor aeronauts. Some strange phenomenon had occurred in the high zones of the sky—a phenomenon of which neither the nature nor the cause could be explained. Today it appeared over America; forty-eight hours afterwards over Europe; a week later in Asia over the Celestial Empire. But still, if this trumpet which announced its presence were not that of the Last Judgment, what was that trumpet?

Hence in all the countries of the world, kingdoms or republics, was a certain anxiety which it was important to allay. If

¹ 'He gave to man a lofty countenance and ordered him to contemplate the sky.'

you hear in your house inexplicable noises, don't you hurry at once to search for the cause, and if your search ends nowhere, don't you leave your house to live in another? Yes, of course! But here the house was the terrestrial globe! No means of leaving it for the Moon, Mars, Venus, Jupiter, or any other planet of the solar system. So it was essential to find out what was happening, not in the infinite void, but within the atmospheric zones. Indeed, no air, no sound, and as there was a sound — always that famous trumpet! — the phenomenon must have originated within the layers of air, whose density continually diminishes, and which does not extend for more than six miles round our spheroid.

Naturally, the newspapers took up the question in their thousands, and treated it in every form, throwing on it both light and darkness, recording true or false, alarming or reassuring their readers — in the interests of publicity — and almost driving ordinary people mad. At one blow party politics dropped unheeded — and the world's affairs went on none the worse. But what could this be?

All the world observatories were consulted. If they didn't reply, what was the use of observatories? If astronomers, who doubled and tripled the stars a hundred thousand million miles away, couldn't explain a phenomenon within a few miles radius, what was the use of astronomers?

How many telescopes, spectacles, lorgnettes, field-glasses, night-glasses, binoculars, monoculars were turned skywards during the clear summer nights; how many eyes were at the eye-pieces of instruments of all ranges and all sizes — that could never be calculated. Perhaps hundreds of thousands at least. Ten times, twenty times as many as the stars that the naked eye can count on the celestial sphere. Not an eclipse, observed from every point on earth, had produced such a wonderful reception.

The observatories replied, but inadequately. Each offered an opinion, but all were different. Hence the civil war in the scientific world during the last weeks of April and the early weeks of May.

The Paris Observatory maintained a complete reserve. None of its sections would give an opinion. In that of mathematical astronomy, they had not been interested to look; in that of transit operations, nothing had been discovered; in that of physical operations, nothing had been perceived; in that of geodesy, nothing had been noticed; in that of meteorology, nothing had been observed; in that of the calculators, nothing had been seen. At least the confession was frank. The same frankness at the Montsouris Observatory, at the Parc St Maur Magnetic Station. The same respect for the truth at the Bureau of Longitudes. Here, indeed, '*Français*' stood for 'frankness'.

The provinces were a little more definite. Perhaps on the night of May the 6th to 7th a light of electrical origin had appeared, its duration not having exceeded twenty seconds. At the Pic-du-Midi, that light had shown itself between nine and ten at night. At the Meteorological Observatory of the Puy-de-Dôme, it had been glimpsed between one and two in the morning; at Mount Ventoux, in Provence, between two and three; at Nice, between three and four; finally, at the Semnoz-Alps, between Annecy, Bourget, and Lake Lemman, just as the dawn was lighting up the sky.

Plainly these observations were not to be rejected in bulk. No doubt that the light had been observed at different places in succession, during some hours. Hence, whether it had been produced from many foci in the terrestrial atmosphere, or from one focus, it was plain that the focus could travel at a speed which must be more than a hundred and twenty miles an hour.

But during the day had anything abnormal been seen in the air?

Nothing.

Had the trumpet been heard in the air?

Not the faintest trumpet-call had resounded between sunrise and sundown.

In the United Kingdom there was much perplexity. The observatories were not in agreement. Greenwich did not succeed

in accepting the opinion of Oxford, although both maintained that — 'It was nothing at all!'

'An optical illusion!' said one.

'An acoustic illusion!' the other replied.

And so they disputed. Anyhow, it was an illusion.

At the Berlin Observatory, at that of Vienna, the argument threatened to involve international complications. But Russia, in the person of the Director of the Poulkowa Observatory, showed that both were right; it depended on the point of view from which they examined the nature of the phenomenon, impossible in theory, possible in practice.

In Switzerland, at the Saentis Observatory, in the canton of Appenzel, at the Rigi, at the Gebiris, at the stations at the St Gothard, at the St Bernard, at Julier, at the Simplon, at Zurich, at the Somblick in the Tyrolean Alps, great reserve was shown regarding a fact which nobody could explain — and this was certainly quite reasonable.

But in Italy, at the meteorological stations of Vesuvius, in the station of Etna, installed in the former Casa Inglese, at Mont Cavo, the observers had no hesitation in admitting the material nature of the phenomenon. They had seen it, by day, in the form of a tiny spiral of vapour, and at night under the aspect of a shooting star. As to what it was, anyhow, they knew absolutely nothing.

To tell the truth, the scientific world began to get bored with this mystery, though it went on exciting, and even frightening, the lowly and ignorant, who, thanks to one of nature's wisest laws, have formed, form, and will form, the immense majority of the world's inhabitants. Astronomers and meteorologists would soon have given up thinking about it had not on the night of the 26th and 27th, the Kantokeyno Observatory at Finmark, in Norway, and on the night of the 28th and 29th that of Isfjord at Spitzbergen — Norwegian one and Swedish the other — found themselves agreed on one point. In the centre of an aurora borealis there had appeared a sort of huge bird, an aerial monster. Though they were unable to determine its

structure, there was no doubt that it had projected from its body small bodies which exploded like bombs.

In Europe no doubt was thrown on this observation of the stations in Finmark and Spitzbergen. But what appeared the most phenomenal about it was that the Swedes and Norwegians could agree on any subject whatever.

The so-called discovery was ridiculed in all the observatories of South America, in Brazil, in Peru as in La Plata, and in those of Australia at Sydney, at Adelaide, as at Melbourne: and the Australian laughter is very catching.

To sum up, only one head of a meteorological station gave an affirmative answer to this question, notwithstanding the sarcasms that his solution might provoke. This was a Chinaman, the director of the observatory at Zi-Ka-Wey, which rises in the centre of a vast plain less than thirty miles from the sea, with an immense horizon and bathed in pure air.

'Possibly,' he said, 'the object we're discussing is an aviation apparatus, a flying machine!'

What a joke!

But if the controversy were keen in the Old World, we can imagine what it must be in that portion of the New, of which the United States occupy the greatest part.

A Yankee, we know, does not wander down all the streets. He takes only one, usually the one which leads him straight to his goal. And the observatories of the American Federation did not hesitate to say their say. If they did not hurl the objective lenses at each other's heads, it was because they would have had to put them back just when they needed them most.

In this much disputed question the observatories of Washington in the District of Columbia, and Cambridge in Massachusetts, found themselves opposed by those of Dartmouth College in Connecticut, and Ann Arbor in Michigan. The subject of their dispute was not the nature of the body observed, but the precise moment of its observation. All of them claimed to have seen it on the same night, at the same hour, the same minute, the same second, although the path of the mysterious

voyager took it but a moderate height above the horizon. Now from Massachusetts to Michigan, from Connecticut to Columbia, the distance is so great that this double observation, made at the same moment, might be regarded as impossible.

Dudley at Albany, in New York State, and West Point, the Military Academy, showed that their colleagues were wrong by an elaborate calculation of the right ascension and declination of the aforesaid body.

But later on it was realized that the observers had been mistaken as to the object, and that all they had seen was a meteor shooting through the lower part of the air. This meteor could not be the object in question, for how could the said meteor have played a trumpet?

It was in vain that they tried to regard this trumpet, with its stirring fanfare, as an acoustic illusion. The ears had been no more deceived than the eyes. Something had certainly been seen, and something had certainly been heard. In the night of May 12th and 13th — a very dark night — the observers at Yale College, in the Sheffield School of Science, had been able to take down a few bars of a musical phrase in D major, common time, which gave note for note, rhythm for rhythm, the chorus of the *Chant du Départ*.

‘Good,’ said the wags. ‘It’s a French orchestra playing in the

But to joke is not to reply, as was pointed out by the observatory at Boston, founded by the Atlantic Iron Works Society, whose opinions in matters of astronomy and meteorology were beginning to have much weight in the world of science.

Then there intervened the observatory at Cincinnati, founded in 1870 on Mount Lookout, thanks to the generosity of Mr Kilgour, and well-known for its micrometric measurements of double stars. Its director declared, with complete good faith, that there had certainly been something, that some moving object had shown itself at very short intervals at different points in the atmosphere, but as regards the nature of this object, its dimensions, its speed, and its path, it was impossible to say.

It was then that a journal whose publicity is immense—the *New York Herald*—received an anonymous contribution:

'Not yet has there been forgotten the rivalry which a few years ago brought into conflict the two heirs of the Begum of Ragginahra, the French doctor Sarrasin, in his city of Franceville, and the German engineer Schultze, in his city of Stahlstadt, both being situated in the southern part of Oregon in the United States.

'Nor will it have been forgotten that, with the object of destroying Franceville, Herr Schultze launched a formidable missile, which should have fallen on the town and annihilated it at a single blow.

'Still less will it be forgotten that this missile, whose initial velocity as it left the mouth of the monster cannon had been miscalculated, had flown off at a speed sixteen times that of ordinary projectiles—or about four hundred and fifty miles an hour—so that it did not fall back to the ground but became a meteor, so that it circles, and must ever circle, round our globe.¹

'Why should not this be the body in question, whose existence cannot be denied?'

Very ingenious, the Correspondent of the *New York Herald*! But the trumpet? There was no trumpet in Herr Schultze's projectile!

So all the explanations explained nothing, and all the observers had observed in vain. There still remained the hypothesis put forward by the director of Zi-Ka-Wey. But the opinion of a Chinaman! . . .

It must not be supposed that the public of the Old and New World ended by getting bored. No! They went on in fine style without reaching an agreement. Then came a period of rest. Some days elapsed without any object, meteor or otherwise, being sighted, and without any trumpet notes being heard in the atmosphere. Had the object fallen on some part of the globe

¹ This singular artificial satellite is described in Jules Verne's story *The Begum's Fortune*—included in the Fitzroy Edition.—I.O.E.

where it would be difficult to trace; into the sea, perhaps? Had it sunk in the depths of the Atlantic, the Pacific, or the Indian Ocean? What was to be said on this point?

But then, between the 2nd and 9th of June, appeared a new series of facts which could not possibly be explained merely by the unaided existence of a cosmic phenomenon.

Within a week the Hamburgers at the top of St Michael's Tower; the Turks on the highest minaret of St Sophia; the Rouennais at the top of the metal spire of their cathedral; the Strasburgers on the summit of their Minster; the Americans on the head of the Statue of Liberty at the entrance of the Hudson, and on the Washington Memorial at Boston; the Chinese on the top of the Temple of the Four Hundred Spirits at Canton; the Hindoos on the sixteenth terrace of the pyramid of the temple at Tanjore; the San Pietrini on the cross of St Peter's at Rome; the English on the cross of St Paul's in London; the Egyptians at the apex of the Great Pyramid of Ghizeh; the Parisians on the lightning conductor of the Eiffel Tower, a thousand feet high, erected for the Exhibition of 1889, could all behold a flag floating from one or other of these inaccessible points.

And the flag was of black bunting, powdered with stars, and it bore a golden sun at its centre.

CHAPTER II

In Which the Members of the Weldon Institute Fail to Agree

AND THE first who says anything against it .

' Indeed! But we shall say it so long as there's anywhere to say it in! '

' And in spite of your threats — '

' Mind what you are saying, Bat Fyn! '

' Mind what you are saying, Uncle Prudent! '

' I still maintain that the screw ought to be at the stern! '

' And so do we! And so do we! ' replied half a hundred voices blended into one.

' No! It ought to be at the prow! ' shouted Phil Evans.

' At the prow! ' roared fifty voices, with a vigour no less remarkable.

' We shall never agree! '

' Never! Never! '

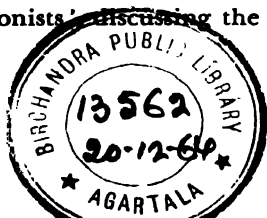
' So what's the good of arguing? '

' It isn't an argument. It's a discussion! '

Nobody would have believed it to listen to the taunts and shouts and curses which filled the lecture-room for a good quarter of an hour.

The room was certainly the largest in the Weldon Institute, the well-known club in Walnut Street, Philadelphia, Pennsylvania, U.S.A.

The evening before, when a lamplighter was being elected, there had been a public demonstration, noisy meetings, and even the interchanges of blows, resulting in an effervescence which had not yet subsided. This would account for some of the excitement just displayed by the members of the Weldon Institute. Yet this was nothing more than a meeting of ' Balloonists ' discussing the question, still — even at that time



—contested, regarding the possibility of steering balloons.

This took place in a town of the United States whose development has been more rapid than that of New York, Chicago, Cincinnati, or San Francisco—a town which is neither a port nor a centre for mining coal or oil, nor an agglomeration of manufactories, nor a terminus of radiating railways—a town larger than Berlin, Manchester, Edinburgh, Liverpool, Vienna, Petersburg, or Dublin—a town possessing a park in which the seven parks of the English capital could all be packed together—a town containing over a million people, and claiming to be the fourth or fifth town of the world after London, Paris and New York.

Philadelphia is almost a city of marble, with its palatial houses and its unrivalled public buildings. The most important of all the colleges of the New World is the Girard College, and this is in Philadelphia. The largest iron bridge on the globe is that across the Schuylkill, and that is in Philadelphia. The finest temple of the Freemasons is the Masonic Temple, and it is in Philadelphia. Finally, the largest club of experts in aerial navigation is in Philadelphia, and anyone who visited it on this evening of June 12th might have found something to interest him.

In this great saloon there were struggling, pushing, gesticulating, shouting, arguing, disputing—each with his hat on his head—about a hundred balloonists, under the high authority of a president, assisted by a secretary and treasurer. They were not engineers by profession. No, they were mere amateurs of all that appertained to aerostatics, and they were amateurs in a fury, and foes in particular of those who would oppose aerostats with any apparatus ‘heavier than air’, flying machines, aerial ships, or what not. That these people might one day discover some method of controlling balloons is quite possible. Certainly their president had some difficulty in controlling *them*.

This president, well-known in Philadelphia, was the famous Uncle Prudent—Prudent being his family name. As to his title ‘Uncle’, that is not surprising in America, where one can

be an uncle without having either nephew or niece. There they say 'Uncle', as elsewhere they say 'Father' about people who have no paternal claims at all.

Uncle Prudent was a personage of some standing, and in spite of his name was notorious for his audacity. He was very rich, and that is no drawback even in the United States; and how could it be otherwise when he owned the greater part of the shares in Niagara Falls? A society of engineers had just been founded in Buffalo for exploiting the cataract. Good business. The seven thousand five hundred cubic yards that flow over Niagara in every second would produce seven millions horse-power. This enormous power, distributed amongst all the workshops within a radius of three hundred miles, would produce an annual income of three hundred million dollars, of which the greater part would find its way into the cash-box of the Society and in particular into the pockets of Uncle Prudent. He was a bachelor, he lived quietly, and his only servant was his valet Frycollin, who was hardly worthy of being the servant of so audacious a master. But there are these anomalies.

Uncle Prudent was rich, and so he had friends, that goes without saying; but as he was president of the club he also had enemies — among others, all those who envied his position. As one of his bitterest foes the secretary of the Weldon Institute must be mentioned.

This was Phil Evans, who also was very rich, as manager of the Walton Watch Company, an important factory, which every day manufactures five hundred movements equal in every respect to the best Swiss workmanship. Phil Evans would have passed for one of the happiest men in the world, and even in the United States, had it not been for Uncle Prudent. Like him he was forty-five years old; like him he had a health which would stand anything; like him he was of undoubted audacity, though like him he did not care to exchange the certain advantages of bachelorhood for the doubtful blessing of marriage. The two men were made to understand each other, but they did

not, for both, it must be confessed, had extremely violent characters: one, Uncle Prudent's hot: the other, Phil Evans, cool.

And why had not Phil Evans been elected president of the club? The votes were exactly divided between Uncle Prudent and himself. Twenty times a scrutiny had been held and twenty times the majority had not declared for either one or the other. The position was embarrassing and it might have lasted for the two candidates' lifetimes.

One of the members of the club then proposed a way out of the difficulty. This was Jem Cip, the treasurer of the Weldon Institute. Cip was one of these confirmed vegetarians, those banishers of all animal nourishment, of all fermented liquor, half a Mussulman, half a Brahman.

On this occasion Jem Cip was supported by another member of the club, William T. Forbes, the manager of a large factory where they made glucose by treating cloth with sulphuric acid, which produces sugar out of old rags. A man of good standing this William T. Forbes, father of two charming old maids — Miss Dorothy, called Doll, and Miss Martha, called Mat, who gave the tone to the best Philadelphia society.

The result of the suggestion of Jem Cip, supported by William T. Forbes and others, was that it was decided to elect the president at the 'mid-point'.

This mode of election can certainly be applied in all cases when it is essential to elect the most deserving; and a number of Americans of high intelligence are already thinking of using it in the nomination of the Presidents of the Republic of the United States.

On two boards of perfect whiteness a black line was traced. The length of each of these lines was mathematically equal, for they had been determined with as much accuracy as the base of the first triangle in a trigonometrical survey. That done, the two boards were erected on the same day in the centre of the conference-room, and the two candidates, each armed with a fine needle, walked up to the board that had fallen to his lot. The man who planted his needle the very nearest to the

middle of the line would be proclaimed President of the Weldon Institute.

It goes without saying that the operation had to be carried out at once — no guide-marks or fumbling about allowed; nothing but sureness of eye. The man must have a compass in his eye, as the saying goes; that was all.

Uncle Prudent thrust in his needle at the same moment as Phil Evans thrust his. Then there began the measurements to decide which of the two competitors had most nearly approached the mid-point.

Wonderful! Such had been the precision of the contestants that the measurements gave no appreciable difference. If they were not exactly in the mathematical mid-point of the line, the discrepancy of the needles was so small as to be invisible to the naked eye.

The meeting was much embarrassed.

Fortunately one of the members, Truk Milnor, insisted that the measurements should be verified by a rule, which, graduated by the micrometric instrument of M. Perreaux, can divide a millimetre into fifteen hundred parts. This rule, in which the divisions between the marks fifteen-hundredths of a millimetre apart had been made with a splinter of diamond, was applied to the lines, and the readings of the divisions through a microscope gave the following results:

Uncle Prudent had got to the centre within six fifteen-hundredths of a millimetre. Phil Evans within nine fifteen-hundredths.

And that is why Phil Evans was only secretary of the Weldon Institute, whereas Uncle Prudent was its president. A difference of three fifteen-hundredths of a millimetre! And it needed no more to make Phil Evans vow against Uncle Prudent one of those hatreds which, though latent, are none the less fierce.

CHAPTER III

In Which it is Explained what they are Disputing About

AT THAT time the many experiments made during the last quarter of the nineteenth century had enabled great progress to be made in the development of dirigible balloons. The gondolas equipped with propulsive screws attached to the airships of the elongated form introduced by Henry Giffard in 1852; to those of Dupuy de Lôme in 1872; of the Tissandier Brothers in 1883; and of Captains Krebs and Renard in 1884; yielded many important results.

But if these machines, moving in a medium heavier than themselves, manoeuvring under the propulsion of a screw, advancing obliquely against the wind or even making headway against a contrary wind to return to their starting point, had been really 'dirigible' their success was solely due to very favourable conditions. In large covered halls, perfect! In a calm atmosphere, good! In a light wind of five or six yards a second, passable! But yet nothing practical had been obtained. Against an air strong enough to turn a windmill—nine yards a second—the machines had remained almost stationary. Against a fresh breeze—eleven yards a second—they would have advanced backwards. In a storm—twenty-seven to thirty-three yards a second—they would have been blown away like a feather. In a hurricane—sixty yards a second—they would have run the risk of being dashed to pieces. And in one of those cyclones which exceeded a hundred yards a second not a fragment of them would have been recovered.

Even after the striking experiments of Captains Krebs and Renard, it was clear that though dirigible aerostats had attained a little speed, they could not be kept going in a moderate

breeze. Hence the impossibility of making practical use of this mode of aerial locomotion.

However this may be compared with this problem of steering aerostats—the methods used for giving them a proper motion—that of the motor itself had made incomparably more progress. For the steam engines of Henry Giffard, and the muscular force of Dupuy de Lôme, electric motors had gradually been substituted. The batteries based on bichromate of potassium used by the Tissandier brothers had given a speed of four yards a second. The dynamo-electric machines of Captains Krebs and Renard had generated a force of twelve horse-power and produced an average speed of six and a half yards per second.

In developing this motor, engineers and electricians had been approaching more and more to that desideratum which might be called 'a horse-power in a watch-case'. Gradually the results of the battery of which Captain Krebs and Renard had kept the secret had been surpassed, and aeronauts were now able to avail themselves of motors whose lightness increased along with their power.

In this there was much to encourage those who believed in the utilization of dirigible balloons. But how many knowledgeable people refused to admit its possibility! If the aerostat is supported in the air it belongs to the medium by which it is surrounded. In such conditions, how can its mass, which offers so much resistance to currents of air, make its way against the wind? This was the real problem, but it was hoped to solve it by using apparatus of very large size.

In this struggle of the inventors to produce a light and powerful motor, the Americans had most nearly attained that famous desideratum. A dynamo-electric apparatus, using a new battery whose composition was still a mystery, had been bought from its inventor, a Boston chemist hitherto unknown. Calculations made with the greatest care, diagrams drawn with the utmost exactitude, showed that with this apparatus driving a screw of suitable dimensions a displacement could be obtained of from twenty to twenty-two yards a second.

This was really magnificent!

'And it isn't dear,' said Uncle Prudent, as he handed to the inventor in return for his formal receipt the last instalment of the hundred thousand dollars he had paid for his invention.

At once the Weldon Institute set to work. When it is a question of an experiment which may have practical utility, the money leaps spontaneously out of the American pockets. The funds flowed in even without its even being necessary to form a syndicate. Three hundred thousand dollars came into the club's account at the first appeal.

The work began under the superintendence of the most celebrated aeronaut of the United States, Harry W. Tinder, immortalized by three of his ascents out of a thousand, in one of which he rose to a height of twelve thousand yards, higher than Gay-Lussac, Coxwell, Sivel, Crocé-Spinelli, Tissandier, Glaisher; another in which he crossed America from New York to San Francisco, exceeding by many hundred leagues the journeys of Nadar, Godard, and several others, to say nothing of that of John Wise, who made eleven hundred and fifty miles from St Louis to Jefferson County; the third, which ended in a drop of fifteen hundred feet at the cost of a slight sprain to the right thumb, although the less-fortunate Pilatre de Rozier fell only eleven hundred feet, and was killed on the spot!

At the time this story begins, it can be judged how far the Weldon Institute had got ahead. In the Turner yard at Philadelphia waited an enormous aerostat, whose strength had been tested by the use of highly compressed air. It well merited the name of the monster balloon.

How large was Nadar's *Géant*?¹ Six thousand cubic yards. How large was John Wise's balloon? Twenty thousand cubic

¹ Felix Tournachon, better known as 'Nadar', was a personal friend of Jules Verne, and the prototype of 'Michael Ardan' in Verne's two stories *From the Earth to the Moon* and *Round the Moon*. An enthusiast for aviation, Nadar had constructed an immense balloon, *Le Géant*, in which he hoped to cross Africa; but after three short flights it crashed, happily without injury to the intrepid Nadar or to his passenger, his equally intrepid wife.—I.O.E.

yards. How large was the Giffard's balloon at the 1878 Exhibition? Twenty-five thousand cubic yards with a radius of twenty yards. Compare these three aerostats with the aerial machine of the Weldon Institute, whose volume amount to forty thousand cubic yards, and you will understand why Uncle Prudent and his colleagues had some right to be puffed up with pride.

This balloon, not being meant to explore the higher strata of the atmosphere, was not called the *Excelsior*, a name which is held in rather too much honour among the citizens of America. No! It was called, simply, the *Go Ahead*, and now all it had to do was to justify its name by conforming to all the manoeuvres of its commander.

The dynamo-electric machine had then almost been completed according to the patent purchased by the Weldon Institute. In less than six weeks the *Go Ahead* would start for its first cruise through space.

But as we have seen, all the mechanical difficulties had not been overcome. Many evenings had been devoted to discussing, not the form of its screw or its dimensions, but whether it ought to be put at the stern of the apparatus, as the Tissandier brothers had done, or at the prow, as Captains Krebs and Renard had done. Needless to add that the partisans of the two systems had almost come to blows. The 'Prowist' party was numerically equal to the 'Sternist'. Uncle Prudent, who had a casting-vote in the event of a tie, but who had no doubt been brought up in the academy of Professor Buridan,¹ could not bring himself to decide.

Hence the impossibility of coming to a decision, the impossibility of getting the screw into place. The dispute might last for some time, unless the Government interfered. But in the United States the Government doesn't like to meddle with

¹ Jean Buridan was one of the fourteenth century scholastic philosophers. He is associated with the idea of 'Buridan's Ass'—a donkey, equally hungry and thirsty and placed exactly midway between a manger of hay and a bucket of water, would die of hunger and thirst because he would be unable to decide which to satisfy first!—I.O.E.

private affairs or to interfere in what doesn't concern it. And in this it is right.

Things were in this state at this meeting on the 13th June, which threatened to end in a frightful uproar—insults exchanged, fisticuffs succeeding the insults, blows with sticks succeeding the fisticuffs, revolver shots succeeding the blows with sticks—when at thirty-seven minutes past eight there came a diversion.

The porter of the Weldon Institute, coolly and calmly, like a policeman amid the storm of the meeting, approached the presidential desk. On it he placed a card. He awaited the orders that Uncle Prudent might find it convenient to give.

Uncle Prudent turned on the steam whistle, which did duty for the presidential bell, for even the bell¹ at the Kremlin would have struck in vain! But the tumult never stopped growing.

Then the president 'bared his head'. Thanks to this extreme measure a semi-silence was obtained.

'A communication!' said Uncle Prudent, after taking a huge pinch from the snuff-box which never left him.

'Speak up! Speak up!' answered eighty-nine voices, happening to be in agreement on this point.

'A stranger, my dear colleagues, asks to be admitted to the meeting.'

'Never!' all the voices replied.

'He desires to demonstrate to us, it seems,' continued Uncle Prudent, 'that to believe in dirigible balloons is to believe in the absurdest of Utopias!'

This declaration was greeted by groans.

'Let him in! Let him in!'

'What is the name of this queer fellow?' asked Secretary Phil Evans.

'Robur,' replied Uncle Prudent.

'Robur! Robur! Robur!' yelled the assembly.

¹ The Kremlin possesses the largest bell in the world. But it is cracked and cannot ring.—I.O.E.

And if a welcome were accorded so quickly to the strange name it was because the Weldon Institute hoped to vent its exasperation on him who bore it. So the storm had calmed down for a moment — to all appearances at any rate. But how can a storm calm down among a people who every month sent two or three of them to Europe in the shape of squalls? *

CHAPTER IV

In Which a Newcomer is not Introduced but Introduces Himself

'CITIZENS OF the United States of America! I am called Robur. I am worthy of that name!¹ I am forty years old although I only look thirty, and I have a constitution of iron, a healthy vigour that nothing can shake, a remarkable muscular strength, and a digestion that would be thought excellent even among the ostriches. So much for my physique!'

They were listening! Yes! The riot was quelled at once by the unexpected nature of this announcement. Was this personage a madman or a hoaxer? Whoever he was, he was imposing and he imposed his will. There was not a whisper in the meeting where but a few minutes before the hurricane had been unchained. After the storm the calm.

And Robur looked the man he said he was. Of middle height, his figure was geometrical—a regular trapezium with the longest of its parallel sides formed by the line of his shoulders. On this line, attached by a robust neck, an enormous spheroidal head. The head of which animal did it most resemble? The head of a bull; but a bull with an intelligent face. Eyes which the least opposition would bring to incandescence, and above them a permanent contraction of the eyebrow muscles, an indication of great energy. Short hair, a little frizzy and with a metallic sheen, like a wig made of steel wool. A broad chest, rising and falling like a smith's bellows; arms, hands, legs, feet, all worthy of the trunk.

No moustache, no whiskers—only a goatee beard like that of a Yankée sailor, so that there was nothing to hide the chin and jaw, whose muscles were evidently of formidable strength. It has been calculated—what has not been calculated?—that

¹ Presumably derived from that of the explosive Roburite.—I.O.E.

the pressure of an average crocodile's jaw can reach four hundred atmospheres, while that of a large-sized hound can only amount to one hundred. From this the following curious formula has been deduced: If a kilogram of dog produces eight kilograms of biting force, a kilogram of crocodile could produce twelve. Now, a kilogram of the aforesaid Robur would not produce less than ten, so that he came between the dog and the crocodile.

What country did this remarkable specimen come from? It would be hard to say. Anyhow, he expressed himself fluently in English without a trace of the drawl which distinguishes the Yankees of New England.

He continued on these lines:

'And now, honourable citizens, for my mental faculties. You see before you an engineer whose moral force is in no way inferior to his physique. I fear nothing and nobody. I have a strength of will that has never had to yield. When I have made something my aim, then the whole of America, the whole of the world, may unite in vain to stop my reaching it. When I have an idea I want everyone to share it, and I will brook no contradiction. I insist on these details, honourable citizens, because it is essential for you to understand me. Perhaps you think I'm talking too much about myself? No matter! And now think a little before you interrupt me, as I've come to tell you something that you may not much want to hear.'

A sound as of the surf began to spread along the first rows of seats—a sign that the sea would not be long in getting stormy.

'Speak, distinguished stranger!' Uncle Prudent, who had some difficulty in restraining himself, was satisfied simply to say that.

And Robur spoke as before, with no more regard for his audience.

'Yes! I know! After a century of experiments leading nowhere, and trials giving no result, there still exist ill-balanced minds who believe it is possible to steer balloons. They imagine

that some sort of motor, electric or otherwise, can be adapted to their pretentious bladders, which are at the mercy of every current in the atmosphere. They persuade themselves that they can be masters of an aerostat as they can be masters of a ship on the surface of the sea. Because a few inventors in calm weather, or nearly so, have succeeded in tacking into the wind, or even beating to windward in a gentle breeze, they think that steering aerial appliances lighter than the air will become practicable. Now, look here; there's a hundred or so of you here who believe in the realization of your dreams, but you're throwing your thousands of dollars not into water but into space! Well, that's to want to fight against the impossible!'

Strange, indeed, that at this affirmation the members of the Weldon Institute did not move. Had they become as deaf as they were patient? Or were they waiting to see how far this audacious contradictor would dare to go?

'What? A balloon! When to obtain the lifting power of a couple of pounds you have to have a cubic yard of gas! A balloon pretending to resist the wind by aid of its machinery, when the pressure of a light breeze on a vessel's sails is not less than a force of four hundred horse-power; when, in the accident to the Tay Bridge, the storm was seen to produce a pressure of eight and a half hundredweight per square yard!

'A balloon, when nature has never constructed anything that flies on such a system, whether it be furnished with wings like birds or membranes like certain fish and certain mammals—'

'Mammals?' exclaimed one of the members of the club.

'Yes! The bat, which flies, if I am not mistaken! Is the gentleman who interrupted me unaware that this sort of poultry is a mammal? Did he ever see an omelette made of bat's eggs?'

Thereupon the interrupter restrained any future interruption, and Robur continued in the same style:

'But does that mean that man is to give up the conquest of the air, and so to transform the domestic and political customs

of the old world by using this admirable means of locomotion? No, it does not! As he has become master of the seas with the ship, by means of the oar, the sail, the paddle-wheel, or the screw, so he will become master of atmospheric space by apparatus heavier than the air—for it must be heavier than the air to be stronger than the air! ’

This time the assembly exploded. What a broadside of yells escaped from all these mouths, aimed at Robur like the muzzles of so many rifles, the mouths of so many guns! Did not this amount to a declaration of war cast into the very camp of the balloonists? To stirring up strife between the ‘lighter’ and ‘the heavier than air’?

Robur did not flinch. With folded arms he courageously waited till silence was obtained.

With a gesture, Uncle Prudent ordered a cease fire.

‘Yes,’ continued Robur, ‘the future will go to the flying-machine. The air affords a solid fulcrum. If a column of air is given an ascensional movement of fifty yards a second, a man can keep on top of it if the soles of his boots have a surface of only an eighth of a square yard. And if its speed be increased to a hundred yards a second, he can walk on it barefoot. Or if, by means of the blades of a screw, a mass of air is made to move with this speed, you get the same result.’

What Robur said had been said before by all the partisans of aviation, whose work must lead, slowly but surely, to the solution of the problem. To Edison and many others goes the honour of having developed so very simple an idea. Given up and then revived time and again, it cannot fail to triumph. To the enemies of aviation, who urge that the bird only sustains itself by warming the air it beats, haven’t they a prompt answer? Haven’t they proved that an eagle weighing ten pounds would have to fill fifty cubic yards with fluid heat merely to support itself in space?

This is what Robur demonstrated with undeniable logic amid the uproar that rose on all sides. And in conclusion these are the words he hurled in the face of the balloonists:—

'With your aerostats you can do nothing—you will arrive at nothing—you dare nothing! The boldest of your aeronauts, John Wise, although he has made an aerial voyage of twelve hundred miles above the American continent, has had to give up his project of crossing the Atlantic! And you have not advanced a step—not one step—towards your end.'

'Sir,' said the president, who in vain endeavoured to keep cool, 'you forget what was said by our immortal Franklin at the appearance of the first montgolfier balloon, "It's only a child, but it will grow!" And it has grown.'

'No, Mr. President, it has not grown! It has only got fatter—and that is not the same thing!'

This was a direct attack on the plans of the Weldon Institute, which had decreed, supported, and paid for the construction of a monster aerostat. And so propositions of a not very reassuring kind began to fly about the room:—

'Down with the interloper!'

'Throw him off the platform!'

'We'll show him who's heavier than air!'

And many others.

But these were only words, not means to an end, so that Robur could continue unperturbed:

'Progress is not for your aerostats, citizen balloonists; it's for flying machines. The bird flies, and it isn't a balloon, it's a machine!'

'Yes, it flies!' exclaimed the fiery Bat T. Fyn, 'but it flies in the face of all the laws of mechanics.'

'Indeed!' Robur shrugged his shoulders. Then he continued: 'Since the study of the flight of birds small and large was begun, one simple idea has prevailed—we have only to imitate nature, which never makes mistakes. Between the albatross, which gives hardly ten beats of the wing per minute, between the pelican, which gives seventy—'

'Seventy-one,' said a sarcastic voice.

'And the bee, which gives one hundred and ninety-two per second—'

'One hundred and ninety-three!' the scoffing continued.

'And the common house-fly, which gives three hundred and thirty—'

'And a half!'

'And the mosquito, which gives millions—'

'No, billions!'

But though interrupted, Robur did not interrupt his demonstration.

'Between these different rates—' he continued.

'There's a big difference,' said a voice.

'There is a possibility of finding a practical solution. When de Lucy showed that the stag-beetle, an insect weighing only two grammes, could lift a weight of four hundred grammes, or two hundred times its own weight, the problem of aviation was solved. Besides, it has been proved that the wing surface decreases in proportion to the increase of the size and weight of the animal. Hence we can imagine and construct more than sixty machines . . .'

'Which would never fly!' exclaimed the secretary, Phil Evans.

'Which have flown, and which will fly,' said Robur, without being disconcerted. 'And whether we call them stréophores, helicopters, ornithopters, or anything else, we reach the appliance whose construction will make man master of space.'

'Oh, the screw!' replied Phil Evans. 'But the bird hasn't got any screw that we know of.'

'Yes,' retorted Robur, 'but Pénaud has shown that in reality the bird makes itself into a screw, and its flight is helicopteral. And the motor of the future is the screw, the helix—'

'From such an evil
St Helix deliver us.'

One of the audience burst into a song, to a tune he happened to remember from Herold's *Zampa*. And everyone took up the refrain in chorus, with such intonations and variations as would have made the French composer groan in his grave.

As the last notes died away in a frightful discord Uncle Prudent took advantage of the momentary calm to say—
'Stranger, so far we've let you speak without interruption.'

For the president of the Weldon Institute shouts, yells, and catcalls were apparently not interruptions, but only an exchange of arguments.

'But I may remind you, all the same, that this theory of aviation has been condemned in advance, and rejected by the majority of American and foreign engineers. It is a system which was the cause of the death of the Flying Saracen at Constantinople, of the monk Volador at Lisbon, of De Letur in 1852, of De Groof in 1864, besides the victims I forget since the mythological Icarus—'

'A system,' replied Robur, 'no more to be condemned than that whose martyrology contains the names of Pilâtre de Rozier at Calais, of Madame Blanchard at Paris, of Donaldson and Grimwood, fallen into Lake Michigan, of Sivel and of Crocè-Spinelli, of Eloy, and so many others that you prefer to forget.'

This was 'tit for tat' with a vengeance.

'Besides,' continued Robur, 'with your balloons, no matter how good they may be, you will never obtain any speed worth mentioning. It would take you ten years to go round the world—and a flying-machine could do it in a week!'

Further yells of protest and denial, which lasted for three good minutes until Phil Evans could get a word in.

'Mr Aviator,' he said, 'you who talk so much of the benefits of aviation, have you ever "aviated"?''

'I have.'

'And achieved the conquest of the air?'

'Perhaps I have, sir.'

'Hooray for Robur the Conqueror!' shouted an ironical voice.

'Well, yes! Robur the Conqueror! I accept the name and I will bear it, for I have a right to it.'

'We beg leave to doubt it!' said Jem Cip.

'Gentlemen,' said Robur, knitting his brows, 'when I have

just been discussing serious matters quite seriously, I do not permit anyone to give me the lie, and I shall be glad to know the name of the interrupter.'

'I'm called Jem Cip, and I'm a vegetarian.'

'Citizen Cip,' said Robur, 'I know that vegetarians usually have longer bowels than other men—a good foot longer at least. That is quite long enough; and so do not compel me to make yours any longer by beginning at your ears—'

'Throw him out!'

'Into the street with him!'

'Tear him to bits!'

'Lynch him!'

'We'll twist him into an helix!

The rage of the balloonists had reached a climax.

They surrounded the platform. Robur disappeared amid a sheaf of hands that waved about as if caught in a storm. In vain the steam-whistle hurled volleys of fanfares at the assembly. That evening Philadelphia might well think that a fire was devouring one of its quarters and that all the waters of the Schuylkill would not suffice to put it out.

Suddenly there was a backwards movement in the tumult. Robur had put his hands into his pockets and was now pointing them at the front ranks of the infuriated mob.

In each hand was one of those American knuckle-dusters which are also revolvers and which the mere pressure of the fingers is enough to fire—pocket machine-guns.

And taking advantage not only of the backward movement of his assailants, but also of the silence which accompanied it—

'Certainly,' he said, 'it wasn't Amerigo Vespucci who discovered the new world, it was Sebastian Cabot! You are not Americans, citizen balloonists! You are only Cabo—'

Four or five pistol-shots cracked out, fired into space. They hurt nobody. In the midst of the smoke the engineer vanished; and when it had cleared away there was no trace of him. Robur the Conqueror had flown off as if some aviatory apparatus had borne him into the air.

CHAPTER V

In Which the Author Tries by Contrast with Frycollin to Rehabilitate the Moon

THIS WAS not the first occasion on which, at the end of their stormy discussions, the members of the Weldon Institute had filled Walnut Street and its neighbourhood with their tumult. Several times the inhabitants had complained of the noisy way in which the proceedings ended, and more than once the policemen had had to interfere to clear the thoroughfare for the passers-by who, for the most part, were supremely indifferent on this question of aerial navigation. But never before this evening had the tumult attained such proportions, never had the complaints been better founded, never had the intervention of the police been more necessary.

But there was some excuse for the members of the Weldon Institute. Somebody had had the effrontery to attack them in their own house. To these fanatics for 'lighter than air' somebody no less fanatical for 'heavier than air' had said things absolutely abhorrent. And just as they were about to treat him as he deserved he had disappeared.

Now this cried aloud for vengeance. To leave such insults unpunished would mean they had no American blood in their veins. Sons of Amerigo regarded as the sons of Cabot? Wasn't that an insult as unpardonable as it happened to be true historically — ?

The members of the club rushed in a number of groups down Walnut Street, then into the adjoining streets, and then all over the neighbourhood. They woke up the householders; they insisted on searching their houses, prepared to indemnify them later on for the outrage on their privacy, so much respected among the Anglo-Saxon peoples. But in vain were all their hullabaloo and their investigations. Robur was nowhere

to be found; there was no trace of him. If he had gone off in the *Go Ahead*, the Weldon Institute's balloon, he could not have vanished more completely. After an hour's hunt the members had to give in and separate, not before they had agreed to extend their search over the whole territory of the two Americas that form the New World.

By eleven o'clock quiet had been restored in the neighbourhood of Walnut Street. Philadelphia was able to sink again into that sound sleep which is the enviable privilege of towns that have never been industrialized. The various members of the club were thinking only of seeking their respective houses. To mention only the most distinguished amongst them, William T. Forbes sought his large sugar establishment, where Miss Doll and Miss Mat had prepared for him his evening tea, sweetened with his own glucose. Truk Milnor took the road to his factory in the most distant suburb, where the engines panted day and night. The Treasurer Jem Cip, publicly accused of possessing an alimentary canal twelve inches longer than the human machine ought to have, returned to the dining-room where his vegetable supper awaited him.

Two of the most important balloonists — two only — did not seem to think of returning to their domicile so soon. They were availing themselves of the opportunity of discussing the question with more than the usual acrimony. These were the irreconcilable Uncle Prudent and Phil Evans, the president and the secretary of the Weldon Institute.

At the club door, the valet Frycollin was waiting for Uncle Prudent, his master, and he began to follow him, though he cared but little for the subject which had set the two colleagues at loggerheads.

It is only by a figure of speech that the verb 'discuss' can be used to express the way in which the duet between the president and secretary was being performed. As a matter of fact they were wrangling with an energy born of their old rivalry.

'No, sir, no,' repeated Phil Evans. 'If I had had the honour

of being president of the Weldon Institute, there would never, no, never have been such a scandal.'

'And what would you have done, if you had had that honour?' demanded Uncle Prudent.

'I would have stopped that insolent fellow before he had opened his mouth.'

'It seems to me that to stop him you would have to let him open his mouth.'

'Not in America, sir; not in America.'

And while exchanging such arguments, bitter rather than sweet, the two walked on through the streets farther and farther from their homes, until they reached a part of the city whose lay-out made them take a long detour.

Frycollin followed, by no means at ease to see his master plunging into these deserted spots. He did not like such places, especially just after midnight; the darkness was, in fact, deep and the moon was only a thin crescent which had hardly begun its career four weeks long. He glanced to left and right to make sure these suspicious shadows were not spying on him. And indeed he fancied he could see five or six hulking fellows who seemed to be keeping him in sight.

Instinctively he drew nearer to his master, but not for the world would he have dared to break in on the conversation of which some fragments were reaching him.

In short, chance decided that the president and secretary of the Weldon Institute should, without realizing it, take the road to Fairmont Park. In the full heat of their dispute they crossed the Schuylkill river by the famous iron bridge. They met only a few belated wayfarers, and pressed on across a wide open tract, partly forming an immense prairie, partly shadowed by the patches of thick woodland which make this park different from any other in the world.

There Frycollin's terror became acute, with some reason, as the five or six shadows were gliding after him across the Schuylkill bridge. The pupils of his eyes broadened so much that they extended to the circumference of his iris, and his

limbs seemed to diminish and shrink, as if he were as contractile as the molluscs and a few articulated animals.

This was because Frycollin, the valet, was a real coward.

He was a pure-bred Negro from Carolina, with a stupid head on a weakling's body. Being only one-and-twenty, he had never been a slave, not even by birth, but he might as well have been one. Grimacing and greedy and idle, and a poltroon of the first order, he had been in Uncle Prudent's service for about three years. His master had been a hundred times on the point of kicking him out, but had kept him on for fear of getting something worse. With a master ever ready to venture on the most audacious enterprises, Frycollin's cowardice had brought him many arduous trials. But there had been compensations. Very little had been said about his gluttony, and still less about his laziness. Ah, Valet Frycollin, if you could only have read the future!

Why hadn't Frycollin stayed at Boston in the service of a certain Sneffel family, and not have given them up because of the avalanches when they talked of going to Switzerland? Was not that a much more suitable place for you than Uncle Prudent's, where rashness was daily welcomed?

But here he was, and his master had got used to his faults. He had one good quality, anyhow. Although he was a Negro by birth he did not 'talk Negro' which was a consideration, for nothing is more unpleasant than that odious jargon in which the use of the possessive pronoun and the infinitive is pushed beyond all bounds.

Thus it is quite clear that the valet Frycollin was a coward, and, as they say, 'as timid as the moon'.

All the same, it is only right to protest against so insulting a comparison for the fair Phoebe, the sweet Sélène, the pure sister of the radiant Apollo. By what right is an accusation of cowardice to be launched against a star which, since the world was a world, has always faced the earth without ever turning its back upon it?

However this may be, at that time — it was almost midnight

—the crescent of the 'pale victim of slander' was beginning to vanish in the west behind the tall branches of the park. Its rays, shining between them, made patches of light on the ground. The woods no longer seemed quite so dark.

This enabled Frycollin to throw an anxious glance around.

'Brrr!' he said. 'They're still there, the rascals! What's more, they're closing in on us!'

He could stand it no longer, and went to his employer.

'Master Uncle,' he said. That was what he called him and what the president of the Weldon Institute liked to be called.

At that moment the dispute of the two rivals was at its height. And as they dragged one another on, Frycollin was brutally made to take part in that promenade.

Then, while they were talking and glaring into one another's eyes, Uncle Prudent plunged ahead across the deserted prairies of Fairmont park, getting ever farther from the Schuylkill River and the bridge they had to cross to get back to the town.

They had reached the centre of a tall clump of trees, whose summits were just tipped by the last rays of the moon. Beyond the trees was a large clearing—an oval field, a complete amphitheatre like that of a race-course. Not a hillock was there to hinder the gallop of the horses, not a bush to stop the view of the spectators, the full length of a circular track several miles long.

And yet if Uncle Prudent and Phil Evans had not been so deep in their dispute, and if they had looked round at all attentively, they would have seen that the clearing was not in its usual state. Was it a flour-mill that had been founded there during the night? It certainly might have been thought so, a flour-mill provided with a number of windmills, whose sails, though motionless, loomed through the semi-darkness.

But neither the president nor the secretary of the Weldon Institute noticed this strange alteration to the landscape of Fairmont Park; and neither did Frycollin. He felt that the prowlers were approaching, and drawing together ready for

their attack. He was seized with convulsive fear, paralysed in all his limbs, with every hair on his head standing on end in the last degree of fright.

Even as his knees bent under him, he had just strength enough to exclaim for the last time—

‘Master Uncle! Master Uncle!’

‘Well, what’s the matter with you?’ asked Uncle Prudent.

Perhaps the disputants would not have been sorry to have relieved their fury at the expense of the unfortunate valet. But they had no time, any more than he had to answer.

A whistle was heard within the woods. At the same moment some sort of electric star gleamed in the midst of the clearing.

A signal? No doubt, and if so the moment had come to perform some deed of violence.

In less time than it needs to imagine it, six men came bounding across the grass, two on to Uncle Prudent, two on to Phil Evans, two on to Frycollin—the two last were obviously superfluous, for the Negro was incapable of defending himself.

Though surprised by this attack, the president and secretary of the Weldon Institute tried to resist. They had neither time nor strength for that. In a few seconds they were rendered speechless by a gag, blinded by a bandage, gripped, pinioned, and carried bodily off across the clearing. What could they think except that they were dealing with the unscrupulous sort of people who have no qualms about robbing anyone out late in the woods? They were not even searched, however, although, as was his custom, Uncle Prudent had upon him several thousand in paper dollars.

In short, a minute after this attack, without a word being spoken by the attackers, Uncle Prudent, Phil Evans, and Frycollin felt themselves laid gently down, not on the grass of the clearing, but on a sort of floor that creaked beneath their weight. They were laid down side by side. A door was shut upon them, and the grating of a bolt in a staple told them that they were prisoners.

Then there came a continuous buzzing, a quivering, a f-r-r-r,

with the r-r-r going on endlessly, without any other sound being perceptible in the calmness of the night.

* * *

What excitement next day in Philadelphia! At quite an early hour it was known what had happened last night at the meeting of the Weldon Institute. The appearance of the mysterious personage, a certain engineer named Robur—Robur the Conqueror!—the war he seemed to want to wage on the balloonists, and his inexplicable disappearance.

But it was quite another thing when all the town heard that the president and secretary of the club had also disappeared during the night of June 12th to 13th.

What enquiries were set on foot in the city and neighbourhood! Useless, anyhow. The newspapers of Philadelphia, then those of Pennsylvania, then those of the United States, reported the facts and explained them in a hundred ways, not one of which was the right one.

Considerable sums were promised in advertisements and on the placards—not only to anyone who could find the gentlemen who had vanished, but to anyone who could produce anything that would lead to their being traced. Nothing came of this. The earth must have opened to swallow them up, for the president and the secretary of the Weldon Institute seemed to have vanished from its surface.

The government papers therefore demanded that the strength of the police should be greatly increased, as similar assaults might be committed against the foremost citizens of the United States—and they were right.

Certainly the opposition papers demanded that the police should be denounced as useless, seeing that similar assaults could be made without its being possible to find the culprits—and maybe they were not wrong.

In the upshot, the police stayed just as they were, which is the sort of thing that happens in this best of worlds which isn't perfect and doesn't know how to be.

CHAPTER VI

In Which the President and the Secretary of the Weldon Institute Agree to Suspend Hostilities

A BANDAGE OVER the eyes, a gag in the mouth, a cord round the wrists, a cord round the ankles, and thus unable to see, to speak, or to move. This was not calculated to make the situation of Uncle Prudent, Phil Evans, and Frycollin, the valet, more acceptable. Not knowing who was responsible for this kidnapping, nor where they had been thrown like mere parcels into a goods waggon; not knowing where they were nor what fate was reserved for them—it was enough to exasperate even the most patient of the ovine species, and clearly the members of the Weldon Institute were not precisely sheep as regards patience. Given his violence of character, one can easily imagine what sort of state Uncle Prudent was in.

One thing was evident, that Phil Evans and he would find it difficult to take their places next evening at the club.

As to Frycollin, his eyes shut and his mouth closed, it was impossible for him to think of anything at all. He was more dead than alive.

For an hour the position of the prisoners remained unchanged. Nobody came to visit them or to restore that liberty of movement and speech of which they had such need. They were reduced to stifled sighs, to grunts emitted through their gags, to plunges like carp taken out of their natural element. Thus were indicated their dumb anger, and their fury imprisoned, or rather in bonds, and the rest may be understood. Then after many fruitless efforts they remained inert for some time. Then as the sense of sight was denied them they tried by their sense of hearing to obtain some indication of exactly what this disquieting state of things really was. But in vain did they seek for any other sound than an unending and

inexplicable f-r-r which seemed to envelop them in a quivering atmosphere.

But at last something happened. Phil Evans, working quite coolly, managed to slacken the cord which bound his wrists. Little by little the knot gave way, his fingers slid over each other, and his hands regained their usual freedom.

A vigorous rubbing restored his circulation, checked by his bonds. A moment later and he had lifted off the bandage which bound his eyes, pulled the gag out of his mouth, and cut the cords round his ankles with his 'bowie knife'. An American who does not keep a bowie knife in his pocket is no longer an American.

But if Phil Evans had regained the power of moving and speaking, that was all. His eyes were useless to him—for the moment at any rate. The prison was quite dark, though a little gleam of light came in through a kind of loophole pierced about six or seven feet high in the wall.

As may well be imagined, Phil Evans did not wait a moment before setting his rival free. A few cuts with the bowie were enough to sever the knots which bound his hands and feet.

Half mad with rage, Uncle Prudent at once rose to his knees and tore away his bandage and his gag.

'Then, in a stifled voice, he said, 'Thanks.'

'No!' replied the other, 'no need for thanks.'

'Phil Evans?'

'Uncle Prudent?'

'Here we're no longer the president and the secretary of the Weldon Institute. We are no longer adversaries.'

'You're right,' answered Phil Evans. 'We're now simply two men who've got to avenge ourselves on a third man whose attack on us demands severe reprisals. And this third man is—'

'It's Robur!'

'It's Robur!'

This was a point on which both were completely agreed. On this subject there was no fear of dispute.

'And your servant?' Evans asked, pointing to Frycollin, who was puffing like a grampus. 'We must let him loose.'

'Not yet,' said Uncle Prudent. 'He would overwhelm us with his lamentations, and we have something else to do than start wrangling.'

'What's that, Uncle Prudent?'

'To save ourselves, if possible.'

'And even if it's impossible.'

'You're right, Phil Evans, even if it's impossible.'

As for doubting, even for a moment, that his kidnapping was the work of that strange person Robur, that could never enter the heads of the president and his colleague. Indeed, a plain honest thief, after robbing them of their watches, jewellery, and purses, would have thrown their bodies into the Schuylkill with a good gash in their throats instead of throwing them into the depths of — Of what? Really a serious question, which would have to be answered before an escape could be attempted with any chance of success.

'Phil Evans,' began Uncle Prudent, 'if, when we came away from our meeting, instead of indulging in friendly exchanges to which we need not recur, we should have done better to be less absent-minded. Had we stayed in the streets of Philadelphia none of this would have happened. Evidently Robur was doubtful about what would happen at the club. He foresaw the anger which his manner would provoke and placed some of his bandits at the door to lend him a hand. When we left Walnut Street these fellows must have watched us and followed us, and when they saw we had imprudently ventured into Fairmont Park they went in for their little game.'

'Agreed,' said Evans. 'We were wrong not to go straight home.'

'It's always wrong not to be right,' said Prudent.

Here a long-drawn sigh escaped from the darkest corner of the cell.

'What's that?' asked Evans.

'Nothing! It's Frycollin dreaming.' And Uncle Prudent continued:

'Between the moment we were seized a few steps away from the clearing and the moment we were thrown into this hole only two minutes elapsed. So it's clear that these people didn't drag us out of Fairmont Park.'

'And if they had, we should have felt we were being moved.'

'Certainly,' replied Uncle Prudent, 'so there's no doubt we're shut up in some sort of vehicle, perhaps one of those long prairie waggons or some showman's caravan—'

'Evidently! For if we were in a boat moored to the banks of the Schuylkill we should have noticed the movement of the current, rocking it from side to side.'

'That is so; and I think that as we're still in the clearing, now if ever is the time to get away, and we can return later to settle with this Robur—'

'And make him pay dearly for this attack on the liberty of two citizens of the United States.'

'Dearly, very dearly!'

'But who is this man? Where does he come from? Is he English, or German, or French—'

'He's a scoundrel, that's enough!' Uncle Prudent summed it up. 'Now let's get to work.'

Then the two, their hands stretched out and their fingers spread wide apart, began to feel round the walls to find a joint or crack.

Nothing. Nothing; not even beside the door. It was closely shut and it was impossible to shoot back the lock. So they would have to make a hole, and escape through it. Now came the question whether the knives could cut into the walls, or whether their blades would be blunted or snap off in the task.

'But where does this unending rustling come from?' asked Evans, much surprised at the continuous f-r-r-r.

'The wind, no doubt,' Uncle Prudent replied.

'The wind? . . . But up to midnight I thought the night was quite calm.'

'So it was. But if it isn't the wind, what do you think it is?' Phil Evans opened the largest blade of his knife and set to work on the wall beside the door. It might be enough to make a hole which would enable him to open it from the outside if it were only bolted or if the key had been left in the lock.

The only result of several minutes work was to blunt the blades of the knife, to nip off its point, and to transform it into a saw with a thousand teeth.

'Doesn't it cut?' asked Uncle Prudent.

'No.'

'Is the cell we're in made of sheet iron?'

'No; it doesn't give a metallic sound when you hit it.'

'Is it made of ironwood, then?'

'No; it isn't iron and it isn't wood.'

'What is it, then?'

'Impossible to say. But, anyhow, it's something that steel doesn't cut.'

Uncle Prudent, in a sudden burst of fury, began to swear and to stamp on the sonorous floor while his hands clenched as though he were trying to strangle an imaginary Robur.

'Calm down, Uncle Prudent, calm down!' Phil Evans told him. 'You have a try.'

Uncle Prudent tried, but the bowie knife could do nothing against a wall which its best blades could not even scratch, as if it were made of crystal.

So escape became impracticable even admitting it would become possible if the door were opened. For the time being they must resign themselves—not a thing for the Yankee temperament—and wait for something to turn up, a course repugnant to these eminently practical men. But this was not arrived at without many curses and hard words and threats, hurled against this Robur—who, if he were in private life what he had been at the Weldon Institute, was not the sort of man to trouble himself much about them.

Suddenly Frycollin began to give unmistakable signs of being unwell. He began to writhe in a most lamentable fashion, with

cramp either in his stomach or in his limbs; and Uncle Prudent, thinking it his duty to put an end to these gymnastics, cut the cords that bound him.

He had reason to be sorry for it. Immediately there came an interminable litany, in which howls of terror were mingled with the tortures of hunger. Frycollin suffered as much in his mind as in his stomach, and it would have been difficult to decide to which organ the chief cause of the trouble should be assigned.

'Frycollin!' exclaimed Uncle Prudent.

'Master Uncle! Master Uncle!' answered the Negro between two of his lugubrious howls.

'We may possibly be doomed to die of hunger in this prison, but we have made up our minds not to succumb until we have exhausted every kind of food which could prolong our lives.'

'Eat me?' wailed Frycollin.

'That's what is always done with a Negro under such circumstances! So, Frycollin, try to let us forget you.'

'Or you'll be a Fry-collation!' Phil Evans added.

And as Frycollin was really afraid that he might be used to prolong two existences more precious than his own, he contented himself with groaning *in petto*.

Time flowed on, and all attempts to force the door or get through the wall were fruitless. What the wall was made of was impossible to say. It was not metal; it was not wood; it was not stone. What was more, the floor of the cell seemed to be made of the same material. When they stamped it gave a most peculiar sound which Uncle Prudent found difficult to classify among known noises. What was more, the floor seemed to sound hollow, as if it were no longer resting directly on the ground of the clearing. And the inexplicable f-r-r-r seemed to caress its lower surface. All of which was hardly reassuring.

'Uncle Prudent!' said Phil Evans.

'Phil Evans!' Uncle Prudent replied.

'Do you think our prison has been moved?'

'No, I don't!'

'Anyhow, when we were first trapped, I could distinctly perceive the fresh fragrance of the grass and the resinous odour of the trees of the park. While now, when I breathe the air in deeply it seems to me as though all those scents have gone.'

'So they have.'

'How do you explain that?'

'We can't explain it at all except on the hypothesis that our prison has moved. But I say again that if we were either in a vehicle on the road or a boat drifting down the stream, we should have felt it.'

Here Frycollin gave vent to a long groan, which might have been taken for his last had he not followed it up with several others.

'I expect Robur will soon have us brought before him,' said Phil Evans.

'I hope so,' said Uncle Prudent. 'And I shall tell him —'

'What?'

'That after beginning by being insulting, he's ended up as a rascal.'

Here Phil Evans noticed that day was beginning to break. A gleam, still faint, filtered through the opening in the upper part of the wall opposite the door. So it ought to be about four in the morning, for it is at that hour in the month of June in this latitude that the horizon of Philadelphia is whitened by the first rays of morning.

But when Uncle Prudent consulted his repeater — a masterpiece from his colleague's own factory — the tiny gong sounded only a quarter to three, though the watch had not stopped.

'Queer!' said Phil Evans. 'At a quarter to three it ought still to be night.'

'Perhaps my watch has got slow,' answered Uncle Prudent.

'A watch of the Walton Watch Company!' exclaimed Phil Evans.

Whatever might be the reason, the day was certainly breaking. Gradually the window gleamed white in the deep darkness of the cell. However, if the dawn appeared sooner than the

fortieth parallel permitted, it did not advance with the speed peculiar to the lower latitudes.

This was something else that Uncle Prudent pointed out, a new inexplicable phenomenon.

'Perhaps we could get up to the window,' Phil Evans suggested, 'and try to see where we are.'

'We might,' said Uncle Prudent. Then, addressing Frycollin: 'Come on, Fry, up on your legs!'

The Negro arose.

'Put your back against the wall,' continued Uncle Prudent, 'and you, Phil Evans, be so good as to get on his shoulders while I buttress him up so that he doesn't slip.'

'Right!' Evans agreed.

An instant later, mounted on Frycollin's shoulders, he had his eyes level with the window. The opening was closed not by a lenticular glass like that of a ship's portholes, but by an ordinary pane. Although it was not very thick, it obstructed Phil Evans, who found his range of view much limited.

'Break the glass,' said Prudent, 'and perhaps you'll be able to see better.'

Phil Evans gave it a sharp knock with the handle of his bowie knife. The window gave a silvery sound, but it did not break.

Another more violent blow. The same result.

'Well!' exclaimed Evans, 'it's unbreakable glass!'

The pane appeared to be made of glass toughened on the Siemens system, for in spite of repeated blows it was still intact.

The light had now increased, and Phil Evans could see for some distance within the limited field of vision afforded by the hole in the wall.

'What can you see?' asked Uncle Prudent.

'Nothing.'

'What? Not a clump of trees?'

'No.'

'Not even the tops of the branches?'

'Not even them!'

'Then we're not in the centre of the clearing?'

'No, not in the clearing nor in the park.'

'Can't you see the roofs of the houses or any of the buildings at all?' asked Prudent, whose disappointment and anger were increasing rapidly.

'Nothing at all!'

'What! Not even a flagpole or a church tower, or a factory chimney?'

'Nothing but empty space.'

At that moment the cell door opened. A man appeared on the threshold.

It was Robur.

'Honourable balloonists!' he said, in serious tones, 'you are now free to come and go as you like. . . .'

'Free!' exclaimed Uncle Prudent.

'Yes—within the limits of the *Albatross*!'

He and Phil Evans rushed out of their cell.

And what did they see?

Four thousand feet below them, or thereabouts, the surface of a country they sought in vain to recognize.

CHAPTER VII

That Engineers, Mechanics, and Other Technicians Would do Better to Skip

‘WHEN WILL man cease to crawl in the depths to live in the azure and peace of the sky?’

To this question of Camille Flammarion's the answer is easy. It will be when the progress of mechanics shall enable us to solve the problem of aviation. And in a few years—as can be foreseen—a more practical utilization of electricity will lead towards the solution of that problem.

In 1783, before the Montgolfier brothers had built the first fire-balloon, and Dr Charles had devised the first hydrogen balloon, a few adventurous spirits had dreamt of the conquest of space by means of mechanical apparatus. The first inventors did not think of anything lighter than air—the science of their time did not allow them to imagine this. It was with contrivances heavier than air, flying-machines constructed in imitation of the bird, that they sought to realize aerial locomotion.

This was just what had been done by that crazy fellow Icarus, the son of Daedalus, whose wings, fastened on with wax, had melted as he approached the sun.

But without going back to mythological times, without mentioning Archytas of Tarentum, we find in the works of Dante of Perugia, of Leonardo da Vinci and of Guidotti, the idea of machines intended to move through the air. Two and a half centuries later inventors began to multiply.

In 1742 the Marquis de Bacqueville designed a system of wings, tried it over the Seine, fell and broke his arm. In 1768 Paulton conceived the idea of an apparatus with two screws, lifting and propulsive. In 1781 Meerwein, architect to the Prince of Baden, built a machine with an ornithoperal motion, and protested against the dirigible aerostats which had just

been invented. In 1784 Launov and Bienvenu had produced a helicopter worked by springs. In 1808 attempts at flight were made by the Austrian Jacques Degan. In 1810 appeared the pamphlet by Deniau of Nantes, laying down the principles of 'heavier than air'.

From 1811 to 1840 came the inventions and researches of Berblingre, Vingual, Sarti, Dubochet, and Cagniard de Lâtour. In 1842 is found the Englishman Henson, with his system of inclined planes and screws driven by steam; in 1845 Cossus and his ascensional screws; in 1847 Camille Vert and his helicopter with feathered wings. In 1852, Leture with his dirigible parachute, though its trial cost him his life; in the same year came Michael Loup with his plan of gliding on four revolving wings.

In 1853 Béléguc and his aeroplane with tractor screws, Vaussin-Chardannes with his dirigible free-flying kite, and George Cayley with his scheme for flying-machines driven by a gas-engine. From 1854 to 1863 appeared Joseph Pline with several patents for aerial systems; Bréant, Carlingford, Le Bris, Du Temple, Bright, whose ascensional screws were contra-rotating; Smythies, Panafieu, Crosnier, and others.

At length, in 1863, thanks to the efforts of Nadar, a 'heavier than air' society was founded in Paris. There the inventors could experiment with machines of which several were already patented—Ponton d'Amécourt and his steam helicopter; La Landelle and his method of combining screws with inclined planes and parachutes; Louvrié and his aeroscaph, Esterno and his mechanical bird, Groof and his apparatus of wings worked by levers.

The inspiration having been given, inventors invented, calculators calculated, everything that ought to render aerial locomotion practicable. Bourcart, Le Bris, Kaufmann, Smyth, Stringfellow, Prigent, Danjard, Pomès and De la Pauze, Moy, Pénaud, Jobert, Hareau de Villeneuve, Achenbach, Garapon, Duchesne, Danduran, Parisel, Dieuaide, Melkisff, Forlanini, Brearey, Tatin, Dandrieux, Edison, some with wings or screws,

others with inclined planes, imagined, created, constructed, perfected their flying-machines which were all ready to work as soon as some inventor could equip them with a motor of sufficient power and exceeding lightness.

Let this somewhat lengthy list be forgiven. Isn't it necessary to show the various rungs in the ladder of aerial locomotion, on whose summit appeared Robur the Conqueror? Without these attempts, these experiments of his predecessors, could the engineer have devised so perfect an apparatus? Decidedly, no! And though he had nothing but contempt for those who insisted on working on dirigible balloons, he held in high esteem all those partisans of 'heavier than air', English, American, Italian, Austrian, French — and particularly French — whose work, perfected by him, had led him to design and then to build this flying-machine, the *Albatross*.

'The pigeon flies!' was the exclamation of one of the most persistent adepts at aviation.

'They will crowd the air as they are crowding the earth!' said one of his most excited partisans.

'From the locomotive to the aeromotive!' shouted the noisiest of all, who had raised to his lips the trumpet of publicity to awaken the Old and New Worlds.

Nothing, in fact, is better established, by experiment and calculation, than that the air is highly resistant. A circle of fabric only a yard in diameter shaped as a parachute can not only impede descent in the air, but can render it uniform. That is a known fact.

It is equally well known that when the speed of propulsion is great the effect of weight varies almost in inverse proportion as the speed increases, and becomes practically insignificant.

It is known, too, that as the weight of a flying animal increases, the area of the winged surface needed to support it does not show a proportional increase, although its movements have to become slower.

A flying-machine must therefore be constructed in such a way as to take advantage of these natural laws and imitate

the bird, 'that admirable type of aerial locomotion', as Dr Marcy, of the Institute of France, has put it.

In short, the contrivances which might solve the problem can be classified in three ways:

1. Helicopters or spiralifers, which are simply screws with vertical axes.

2. Ornithopters, machines which seek to reproduce 'the natural flight of the birds.

3. Aeroplanes, which to tell the truth are merely inclined planes similar to kites, but towed or driven by horizontal screws.

Each of these systems has had and still has its own partisans obstinately resolved to yield nothing on this point.

Robur, however, had for many reasons rejected the last two.

The ornithopter, or mechanical bird, no doubt offers certain advantages. The work and experiments of M. Renard in 1884 have demonstrated this. But, as has been said, there is no need to imitate Nature servilely. Locomotives are not modelled upon the hare, nor steamships upon the fish. To the first are applied wheels—which are not legs; to the second screws—which are not fins. And they do not do so badly. On the contrary. Moreover, do we really understand the mechanism of the flight of birds, whose movements are so complex? Did not Doctor Marcy suspect that the feathers open during the return stroke of the wing to let the air pass through them? And is not that rather a difficult operation to produce with an artificial machine?

On the other hand there can be no doubt that airplanes have yielded excellent results. Screws driving a plane obliquely to the air-layers afford a method of producing an ascensional movement, and the experimental models have shown that the pay-load—the weight it is possible to lift as distinct from that of the apparatus itself—increases in proportion to the square of the velocity. This has a great advantage—greater even to that of the aerostat when given a movement of translation.

Nevertheless Robur had thought that the simpler, the better.

And the screws—the ‘Saint Helices’ that had been thrown in his teeth at the Weldon Institute—had sufficed for all the needs of his flying-machine. Some could hold it suspended in the air, the others could propel it along under conditions marvellous for speed and safety.

In theory, at any rate, according to Victor Tatin, a screw turning quite slowly but with a considerable surface, would be enough ‘taking an extreme view, to lift an indefinitely large weight with the minimum of power’.

If the ornithopter—striking the air like the wings of a bird—supports itself upon a column of air, the helicopter raises itself by striking the air obliquely with the blades of the screw as though it were rising along an inclined plane. These blades, or arms, are really wings, but wings arranged as a screw instead of as paddles. The screw moves generally in the direction of its axis. Is the axis vertical? Then it moves vertically. Is the axis horizontal? Then it moves horizontally.

The whole of Robur’s flying apparatus was based on these two movements, as will be seen from the following detailed description, which can be divided under three heads—the airframe, the lifting and propulsive engines, and the power plant.

Airframe.—This was a structure a hundred feet long and twelve wide, a ship’s deck in fact, with a projecting prow like a ram. Beneath was a hull, solidly built, enclosing the apparatus designed to generate the mechanical power, the hold for the munitions, engines, tools, stores and provisions of all sorts, including the water-tanks. Round the deck a few light uprights were connected by a wire trellis, supporting a rail that served as bulwarks.

On the deck rose three houses, some of whose compartments served as cabins for the crew and others as the engine-rooms. In the centre deck house worked the engine which drove the lifting screws, in that forward was the one that drove the propulsive screw at the bow, in that aft the one that drove the screw at the stern. In the bow there were also the ‘usual

offices', the cook's galley and the crew's quarters; in the stern were several cabins, including the engineer's, the saloon—and above them a glazed look-out in which stood the helmsman, who steered the vessel by means of a powerful rudder.

All these cabins were lighted by portholes fitted with toughened glass, with ten times the resistance of ordinary glass. Beneath the hull a system of flexible springs enabled the aircraft to be gently grounded and thus gave the engineer complete control of its movements.

Lifting and propulsive engines.—Above the deck rose thirty-seven vertical axes, fifteen along each side, with seven higher ones down the middle. The *Albatross* might thus be called a clipper ship with thirty-seven masts. But instead of sails these masts bore each two horizontal contra-rotating screws, not very large but driven at a prodigious speed. Each screw moved independently of the rest, and in each pair one spun round in the opposite direction from the other—an arrangement essential to avoid giving the vessel any tendency to gyration. Hence the screws, as they rose on the vertical slip-stream they produced, kept the vessel in equilibrium against its vertical resistance. The apparatus was thus equipped with seventy-four lifting screws, each consisting of three blades connected by a metal circle which, by acting as a fly-wheel, economized their motive force.¹

At prow and stern, mounted on horizontal axes, were two contra-rotating propulsive screws, each with four blades. These screws, of much larger diameter than the lifting ones, could similarly work at a very high speed. The vessel, in fact, combined the systems of Cossus, La Landelle, and Ponton d'Amécourt, as perfected by Robur. But it was in the choice and application of his motive power that he could claim to be an inventor.

Power plant.—It was not from the vapour of water or of any

¹ Verne seems to have been under the impression that, like a steam-engine of reciprocating type, an electric motor needs a heavy flywheel to keep the rotation constant.—I.O.E.

other liquid nor of compressed air or other elastic gases, nor of explosive mixtures capable of producing mechanical motion that Robur had sought the power necessary to support and propel his apparatus. It was from electricity, that agent which one day will be the soul of the industrial world. But he required no electric-motor to produce it, only batteries and accumulators.

What were the elements of these batteries, and what were the acids he used? That was Robur's secret, as was that of the accumulators. Of what type were their positive and negative plates? Nobody knows. The engineer took good care—and not unreasonably—to keep his secret unpatented. The indisputable result was that the batteries were of extraordinary strength and that the accumulators left very far behind those of Faure-Sellon-Volckmar, yielding current strengths which ran into ampère figures hitherto unknown. Thus there was obtained a horse-power, which might almost be called infinite, to drive the screws and to give the apparatus a lifting and propulsive force in excess of all his requirements under any circumstances.

But—it is necessary to repeat it—this battery belonged entirely to Robur. He kept it a close secret. And if the president and secretary of the Weldon Institute did not succeed in learning it, his secret would probably be lost to humanity.

It goes without saying that the apparatus was given sufficient stability by the position of its centre of gravity. There was no danger of its assuming disquieting angles to the horizontal, still less of its capsizing.

It remains to be known what material was used by Robur in the construction of his *aeronef*¹—a name which can be exactly applied to the *Albatross*. What was this material, so hard that the bowie knife of Phil Evans could not scratch it, that Uncle Prudent could not explain its nature? It was nothing but paper.

¹ *Aeronef*.—*Aer*—air, *navis*—ship, literally an 'airship'. Hence the title chosen by the original translator: 'Clipper' of the Clouds.—I.O.E.

For some years the production of this had been making considerable progress. Unsized paper, its sheets impregnated with dextrin and starch and compressed in hydraulic presses, becomes a material as hard as steel: pulleys, rails, and waggon-wheels were made of it, far more solid than metal wheels, and far lighter. And it was this solidity, this lightness, which Robur had sought to use in building his aerial locomotive.

Everything—framework, hull, deck houses, cabins—was made of straw-paper rendered metallic by compression, and—what was not to be despised in an apparatus flying at great heights—incombustible. The components of the lifting and propulsive engines, the axes and the screws were made of gelatinized fibre, which combined flexibility with resistance. This material could be used in every desired form. It was insoluble in most gases and liquids, in acids and in petrol—to say nothing of its insulating properties—and it proved most valuable in the electrical apparatus of the *Albatross*.

Robur, the inventor, his mate, Tom Turner, a mechanic and two assistants, two steersmen and a cook—eight all told—formed the crew of the aeronef, and proved ample for all the manoeuvres required in aerial navigation. Weapons for hunting and war; fishing tackle; electric lighting; instruments of observation, compasses, and sextants for checking the course, thermometers for studying the temperature, several barometers, some for estimating the heights attained, others for indicating the variations of atmospheric pressure; a storm-glass for forecasting tempests; a small library; a portable printing-press; a breech-loading gun mounted on a pivot and throwing a three-inch shell: a supply of powder, bullets and dynamite cartridges; a kitchen-stove, heated by the current from the accumulators; a stock of preserves, meats and vegetables, stored in a canteen with several barrels of brandy, whisky and gin, enough to last for months without having to land—such were the equipment and stores of the aeronef—not to mention the famous trumpet.

There was, moreover, a light, unsinkable, india-rubber boat,

which could carry eight men on the surface of a river, a lake, or a calm sea.

But had Robur provided himself with any parachutes in case of accidents? No. He did not believe in accidents of that kind. The axes of the screws were independent. The stoppage of a few would not affect the motion of the others; and if only half were working, the *Albatross* could keep afloat in her natural element.

'And with her,' as Robur was careful to explain to his new guests—guests in spite of themselves—'with her I am master of the seventh part of the world, greater than Africa, Oceania, Asia, America, and Europe, this aerial Icarian sea, which millions of Icarians will one day people.'

CHAPTER VIII

In Which the Balloonists Still Refuse to be Convinced

THE PRESIDENT of the Weldon Institute was stupefied; his companion was stunned. But neither would allow any of his very natural amazement to appear.

The valet Frycollin did not conceal his terror at finding himself borne through space on such a machine, and he took no pains whatever to hide it.

Meanwhile the lifting screws were spinning overhead. Rapidly as they were rotating, they would have to triple their speed if the *Albatross* were to ascend to higher zones. The two propellers were turning at a fairly moderate speed and gave the ship a velocity of only eleven miles an hour.

As they leaned over the rail the passengers of the *Albatross* could perceive a long sinuous liquid ribbon which meandered like a brook through a varied countryside amidst the gleaming of many lakes obliquely struck by the rays of the sun. That brook was a river, one of the most important in that district.

'Will you tell us 'where we are?' demanded Uncle Prudent in a voice trembling with anger.

'I have nothing to tell you,' answered Robur.

'And will you tell us where we are going?' said Phil Evans.

'Through space.'

'And how long will that last?'

'As long as it has to.'

'Is it a question of going round the world?' Phil Evans asked ironically.

'Farther than that,' said Robur.

'And if this voyage does not suit us?' asked Uncle Prudent.

'It will have to suit you.'

That is a foretaste of the nature of the relations that were

to obtain between the master of the *Albatross* and his guests, not to say his prisoners. Manifestly he wanted to give them time to cool down, to admire the marvellous apparatus which was bearing them through the air, and no doubt to compliment the inventor. And so he pretended to go off to the other end of the deck. Free to examine the arrangement of the machinery and the handling of the ship or to give their whole attention to the landscape which was unrolling beneath them, they stared downwards.

'Uncle Prudent,' said Phil Evans; 'if I'm not mistaken we must be flying over Central Canada. That river flowing there in the north-west is the St Lawrence. That town we're leaving behind us is Quebec.'

It was indeed the old city of Champlain, whose tin-plate roofs were shining like reflectors in the sun. The *Albatross* must thus have reached the forty-sixth degree of north latitude, and this explained the premature advance of the day with the abnormal prolongation of the dawn.

'Yes,' Phil Evans continued, 'there's the town in its amphitheatre, the hill that bears its citadel, the Gibraltar of North America. There's the French and English cathedrals. There's the Custom House with its dome surmounted by the British flag!'

Phil Evans had not finished before the Canadian city began to slip into the distance, and the aeronef entered a zone of light clouds, which gradually shut off the view of the ground.

Robur, seeing that the president and the secretary of the Weldon Institute had directed their attention to the external construction of the *Albatross*, went up to them and said, 'Well, gentlemen, do you believe in the possibility of aerial locomotion by machines heavier than air?'

It would have been difficult not to give way to the evidence. But Uncle Prudent and Phil Evans did not reply.

'You're silent,' continued the engineer. 'No doubt it's hunger that keeps you from speaking! . . . But if I undertook to carry you through the air, you needn't think I'm going to

feed you on that poorly nutritive fluid. Your first meal is waiting for you."

As Uncle Prudent and Phil Evans were feeling the pangs of hunger somewhat keenly they did not care to stand upon ceremony. A meal would commit them to nothing; and when Robur put them back on the ground they could count on being able to resume full liberty of action.

They were led into a small dining-room within the after deck-house. There they found a well-laid table at which they could take their meals during the voyage. There were a variety of preserves; and, among other things, a sort of bread made of equal parts of flour and meat reduced to powder and worked together with a little lard, which when boiled in water made excellent soup; then rashers of fried ham; and for drink there was tea.

Neither had Frycollin been forgotten. Taken forward, he found some strong soup made of this bread. In truth, he needed to be very hungry to eat at all, for his jaws shook with fear and almost refused to work.

'If it breaks! If it breaks!' was the wail of the unfortunate Negro.

This made him turn faint. Just to think of it! A fall of over four thousand feet, which would reduce him to pulp!

An hour later Uncle Prudent and Phil Evans reappeared on the platform. Robur was no longer there.

In his glazed cabin at the stern, the man at the wheel, his eyes fixed on the compass, imperturbably followed without hesitation the route given by the engineer.

As for the rest of the crew, it was probably breakfast that kept them in their quarters. An assistant engineer, detailed to supervise the machinery, went from one deck-house to the other.

If the speed of the ship were great the two colleagues could estimate it only imperfectly, though the *Albatross* had now emerged from the cloud zone and the ground showed some four thousand feet below.

'I can hardly believe it,' said Phil Evans.

'Don't let's believe it!' said Uncle Prudent. And going to the bow they looked out towards the western horizon.

'Oh! Another town!' said Phil Evans.

'Can you make it out?'

'Yes! It seems to be Montreal.'

'Montreal? But we only left Quebec two hours ago at most!'

'That shows that we must be going at a speed of seventy-five miles an hour.'

Such was the speed of the aeronef; and if the passengers were not inconvenienced by it, it was because they were going with the wind. In a calm the speed would have been slowed to that of an express. In a head-wind it would have been unbearable.

Phil Evans was not mistaken. Below the *Albatross* appeared Montreal, easily recognizable by the Victoria Bridge, a tubular bridge thrown over the St Lawrence like the railway viaduct which crosses the Venice lagoon. Soon they could distinguish the town's wide streets, its huge shops, its palatial banks, its cathedral, a basilica recently built on the model of St Peter's at Rome, and at last Mount Royal, which commands the city and forms a magnificent park.

Luckily Phil Evans had visited the chief towns of Canada, and could recognize several of them without asking Robur. After Montreal, about half-past one in the afternoon they passed Ottawa, whose falls, seen from above, looked like a vast cauldron in ebullition, throwing off masses of steam with the most grandiose effect.

'There's Parliament House,' he explained.

And he pointed out a sort of Nuremberg toy planted on a hill. This toy with its polychrome architecture resembles the London Houses of Parliament as much as the Montreal Cathedral resembles St Peter's in Rome. But that was of no consequence; there could be no doubt it was Ottawa.

Soon the city faded away towards the horizon, and formed only a luminous spot upon the ground.

It was almost two o'clock before Robur appeared, his mate, Tom Turner, accompanying him. He said only three words, which were transmitted to the two assistant-engineers in the fore and aft engine-houses. At a sign the helmsman changed the direction of the *Albatross* a couple of points to the south-west; at the same time Uncle Prudent and Phil Evans were able to realize that a greater speed had been given to the propellers.

The speed, in fact, had been doubled, and now surpassed anything ever attained hitherto by the fastest engine of terrestrial locomotion. Torpedo-boats can make twenty-two knots; trains on the French and English railways reach sixty miles an hour; the ice-boats on the frozen rivers of the United States do sixty-five miles an hour; a machine built by the Patterson company, with a cogged wheel, has done its eighty miles on the Lake Erie line; and another locomotive between Trenton and Jersey has reached eighty-four.

But the *Albatross*, at full speed, could sweep forward at a hundred and twenty miles an hour, or 176 feet per second. This speed is that of the hurricane which tears up trees by the roots, that of a certain gale which at Cahors, during the storm of September 21st, 1881, roared at a hundred and fifteen miles an hour. It is the average speed of the carrier pigeon and is surpassed only by the flight of the swallow (220 feet per second) and that of the swift (274 feet per second).

In short, as Robur had said, the *Albatross*, by using the whole force of her screws, could make the tour of the globe in two hundred hours—less than eight days.

That the world then owned 280,000 miles of railway—about eleven times its equatorial diameter—that mattered little to this flying-machine. Couldn't it make use of the whole atmosphere?

But now is there any need to explain? The phenomenon which had so much puzzled the people of the two worlds was the engineer's aeronef. The trumpet which blared its startling fanfares through the air was that of the mate, Tom Turner. The flag planted on the principal monuments of Europe, Asia,

America, was the flag of Robur the Conqueror and his *Albatross*.

And if up to then the engineer had taken precautions against being recognized, if by preference he had travelled at night, finding his way with his electric lights, and during the day vanishing above the cloud-banks, he now seemed to have no wish to keep his secret hidden. And if he had come to Philadelphia and appeared before the meeting of the Weldon Institute, was it not to make known his prodigious discovery, and to convince *ipso facto* the most incredulous?

We know how he had been received, and we see what reprisals he took on the president and secretary of the club.

Again Robur approached his prisoners, who pretended to be not at all surprised at what they saw, at what they were experiencing in spite of themselves. Evidently beneath the skulls of these two Anglo-Saxons was a thick crust of obstinacy which it would not be easy to remove.

On his part, Robur did not seem to notice this peculiarity, and just as if he were continuing a conversation which he had begun two hours before: 'Gentlemen,' he said, 'you are no doubt asking yourselves whether this apparatus, so marvelously adapted for aerial locomotion, could be given a greater speed. It is not worth while to conquer space unless we can devour it. I wanted the air to support me firmly, and it does. I realized that to struggle against the wind all that I needed was to be stronger than the wind, and I am. No need of sails to speed me on, nor of oars nor wheels to thrust me, nor of rails to enable me to travel faster. Air—that is everything. Air surrounds me as water surrounds the submarine boat, and in it my propellers act like the screws of a steamer. That is how I solved the problem of aviation. That is what a balloon will never do, nor any other machine that is lighter than air.'

Complete silence on the part of the colleagues—which did not for a moment disconcert the engineer. He contented himself with a slight smile, and continued in his interrogatory style—

'Perhaps you are asking whether with this power the *Albatross* has of moving horizontally there is combined a similar power of vertical movement—in a word, if, when, we visit the high zones of the atmosphere, we can compete with an aerostat? Well, I should not advise you to enter the *Go Ahead* against her!'

The two colleagues simply shrugged their shoulders. That was perhaps what the engineer was waiting for.

Robur made a sign. The propelling screws stopped, and after cruising on for a mile the *Albatross* stayed motionless.

At a second gesture from Robur the suspensory screws revolved at a speed that can only be compared with that of a siren in an acoustical experiment. Their f-r-r rose nearly an octave in the scale of sound, diminishing gradually in intensity as the air became more rarefied, and the machine rose vertically, like a lark singing his shrill song in space.

'Master! Master!' shouted Frycollin. 'Take care it doesn't break!'

A smile of disdain was Robur's only reply. In a few minutes the *Albatross* had attained a height of 8,700 feet, which extended the range of vision to seventy miles—and then of 12,000 feet, the barometer having fallen to twenty inches.

Then, the experiment having been carried out, the *Albatross* descended. The fall of the pressure of high altitudes leads to a diminution of oxygen in the air, and consequently in the blood. This has been the cause of several accidents which have befallen some aeronauts, and Robur thought it useless to expose himself to them.

The *Albatross* thus returned to the height she seemed to prefer, and her propellers, again brought into play, sped her faster than ever to the south-west.

'Now, gentlemen, if that is what you wanted you have had your answer.'

Then, leaning over the rail, he remained absorbed in contemplation.

When he raised his head the president and secretary of the Weldon Institute stood by his side.

'Engineer Robur,' said Uncle Prudent, in vain endeavouring to control himself, 'we have nothing to ask about your views. But we want to ask you a question to which we expect you will be good enough to reply.'

'Speak.'

'By what right did you attack us in Philadelphia in Fairmont Park? By what right did you shut us up in that prison? By what right have you brought us against our will on board this flying-machine?'

'And by what right, Messrs Balloonists, did you insult me, shout me down and threaten me in your club until I'm surprised I came out of it alive?'

'To ask is not to answer,' said Phil Evans, 'and I ask you again by what right?'

'You really want to know?'

'If you please.'

'Well, by the right of the strongest!'

'That is cynical.'

'But it's true.'

'And for how long, citizen engineer,' asked Uncle Prudent, who was on the point of exploding, 'for how long do you intend to exercise that right?'

'Well, gentlemen,' said Robur, ironically, 'how can you ask me such a question when you have only to lower your eyes to enjoy a spectacle unparalleled on earth?'

The *Albatross* was then sweeping across the immense mirror of Lake Ontario. She had crossed the country so poetically extolled by Cooper. Then she followed the southern shore of that great sheet of water and headed for the celebrated river which pours into it the waters of Lake Erie, hurling them over its cataracts.

For an instant a majestic sound, a roar as of a tempest, rose towards them; and, as if a humid fog had been cast into the air, the atmosphere perceptibly grew even more fresh.

Below like a mighty horse-shoe hurtled the mass of liquid. It looked like an enormous flow of crystal in the midst of a thousand rainbows produced by refraction as it decomposed the rays of the sun. The sight was sublime.

Below the falls a foot-bridge, stretched like a thread, united the one bank to the other. Three miles lower down was a suspension bridge, across which a train was crawling from the Canadian to the American bank.

'The Niagara Falls!' exclaimed Phil Evans. And as this cry escaped him, Uncle Prudent was doing all he could not to admire these wonders.¹

A minute later the *Albatross*, having crossed the river which separates the United States from Canada, was speeding above the vast territories of the West.

¹ Verne had himself visited the Falls and was deeply impressed by 'these wonders'. Hence this poetic description. (See *A Floating City*, included in the Fitzroy Edition.)—I.O.E.

CHAPTER IX

In Which it Will be Seen What Reply Robur Gives to the Question Asked Him

IN ONE of the cabins of the after-house Uncle Prudent and Phil Evans had found two excellent berths, with clean linen, a change of clothes, and travelling cloaks and rugs. A Trans-Atlantic liner could not have offered them more comfort. If they did not sleep soundly it was because they did not wish to do so, or rather that their very real anxiety forbade sleep. On what adventure had they embarked? To what series of experiments had they been invited, *inviti*, if it be permitted to contrast the Latin and English words? How would the whole business end, and above all, what was Robur going to do with them?

Frycollin, the valet, was quartered forward in a cabin adjoining that of the cook. The neighbourhood did not displease him; he liked to rub shoulders with the world's great men. But if he at last went to sleep it was to dream of fall after fall, of descents through space, which turned his sleep into a horrible nightmare.

However, nothing could be more peaceful than this journey through the atmosphere, whose currents had died down with evening. But for the rustling of the blades of the screws there was not a sound at this altitude. Now and then came the whistle of some terrestrial locomotive, or the howls of the domestic animals. Strange instinct! These terrestrial beings felt the aeronef glide over them, and uttered cries of terror as she passed.

On the morrow, June 14th, at five o'clock, Uncle Prudent and Phil Evans were walking in the airframe, or rather on the deck, of the *Albatross*. Nothing had changed since the night before; there was a look-out at the bow, and the helmsman was at the stern.

Why was there a look-out? Was any collision to be feared with another machine? Certainly not. Robur had not yet found any imitators. The chance of encountering some aerostat gliding through the air was so trifling a risk it need not be considered. In any event, so much the worse for the aerostat — the earthen pot and the iron pot. The *Albatross* had nothing to fear from such a collision.

But, anyhow, what could happen? Yes, it was not impossible that the aeronef might find herself like a ship on a lee shore if some mountain that could not be surmounted or passed should bar her way. These are the reefs of the air, and they have to be avoided as a ship avoids the reefs of the sea. The engineer, it is true, had set the course like a ship's captain, and had taken into account the altitude necessary to clear the highest summits in the land. But the aeronef would not be long before she soared over a mountainous country, it was only prudent to keep a good look-out, in case she had to deviate slightly from her course.

Looking at the country beneath them, Uncle Prudent and Phil Evans noticed a large lake, the south of whose lower end the *Albatross* was about to reach. They concluded, therefore, that during the night the whole length of Erie had been traversed, and that, as they were going due west, they would soon be over the end of Lake Michigan.

'No possible doubt about it,' said Phil Evans, 'that mass of roofs on the horizon, that's Chicago.'

He was not mistaken. It was indeed the city from which seventeen railways diverge, the Queen of the West, the vast reservoir into which flow the products of Indiana, Ohio, Wisconsin, Missouri, and all the States forming the western half of the Union.

Uncle Prudent, provided with an excellent telescope he had found in his cabin, easily recognized the town's principal buildings. His colleague pointed out to him the churches and public edifices, the numerous 'elevators' or mechanical granaries, and the huge Sherman Hotel, whose windows seemed

like a hundred glittering points on each of its faces.

'If that's Chicago,' said Uncle Prudent, 'that shows obviously that we're going farther west than we want, if we're to be able to get back to our starting-point.'

And, in fact, the *Albatross* was going on in a straight line from the Pennsylvanian capital.

But, if Uncle Prudent wanted to ask Robur to take him eastwards he could not do so just then. That morning the engineer did not seem to wish to leave his cabin, whether he was occupied in some work, or still asleep. The two colleagues sat down to breakfast without having seen him.

The speed had not been changed since the previous day. The wind being easterly, it had not been hindered at all, and as the thermometer only falls half a degree fahrenheit for every seventy yards height the temperature was not unbearable. And so, while chatting and thinking and waiting for the engineer, Uncle Prudent and Phil Evans walked about beneath the forest of screws, the movement of whose blades turned each of them into a semi-diaphanous disk.

The State of Illinois was crossed along its northern frontier in less than two hours and a half. Then they soared above the Father of Waters, the Mississippi, whose double-decked steamboats seemed no larger than canoes. Then the *Albatross* flew over Iowa after having sighted Iowa city about eleven in the morning.

A few chains of hills or 'bluffs' writhed across the face of the country, trending from the south to the north-west. Their moderate height did not make it necessary for the aeronef to rise. Soon the bluffs gave place to the large plains of Iowa, stretching right across its western part and across Nebraska—immense prairies extending all the way to the foot of the Rocky Mountains. Here and there many rios, tributaries or sub-tributaries of the Missouri. On the banks, towns and villages, more scattered as the *Albatross* sped more quickly towards the west.

Nothing special happened that day. Uncle Prudent and Phil

Evans were left entirely to themselves. They hardly noticed Frycollin sprawling out in the bow, keeping his eyes shut so that he could see nothing. Yet they were not attacked by vertigo, as might have been expected. There was nothing to compare their position with, as there would have been on the top of a lofty building. The abyss has no hypnotic power when it is gazed at from the car of a balloon or the deck of an aeronef, or rather it is not an abyss that opens beneath the aeronaut, but a horizon that rises and surrounds him on all sides.

In a couple of hours the *Albatross* was over Omaha, on the Nebraska frontier—Omaha city, the real head of the Pacific Railway, that long line of rails, four thousand five hundred miles in length, stretching from New York to San Francisco. For a moment they could see the yellowish waters of the Missouri, then the town, with its houses of wood and brick in the centre of a rich basin, like a buckle in the belt of iron which clasps North America round the waist. Doubtless, too, as the passengers in the aeronef could observe all these details, the inhabitants of Omaha must have noticed the strange machine. But their astonishment at seeing it gliding overhead could be no greater than that of the president and the secretary of the Weldon Institute at finding themselves on board.

Certainly it was a fact on which the journals of the Union would be certain to comment. It would explain the astonishing phenomenon which the whole world had been wondering about for some time.

An hour later, the *Albatross* had left Omaha. She still followed her eastward course, leaving the Platte River, whose valley is followed by the Pacific Railway in its route across the prairie. This was not very satisfactory for Uncle Prudent and Phil Evans.

‘It’s serious, then, this absurd project of taking us to the Antipodes,’ asked one.

‘And against our wills!’ replied the other. ‘Robur had better take care! I’m not the man to stand it!’

'Nor am I!' replied Phil Evans. 'But believe me, Uncle Prudent, you must try to keep calm.'

'Keep calm! Me!'

'And keep your temper until you get a chance.'

By five, after crossing the Black Mountains covered with pines and cedars, the *Albatross* was flying over the appropriately named Bad Lands of Nebraska—a chaos of ochre-coloured hills, of mountainous fragments fallen on the soil and broken in their fall. From a distance these blocks take on the most fantastic shapes. Here and there amid this enormous game of knuckle-bones there could be imagined the ruins of mediaeval cities with their forts and donjons, of castles with their battlements and pepper-pot turrets. But in truth these Bad Lands are an immense graveyard where lie bleaching in the sun myriads of fragments of pachyderms, turtles, and even, it is said, of fossil man, overwhelmed by some unknown cataclysm of the primeval ages.

When the evening came the whole basin of the Platte River had been crossed, and the plain extended to the extreme limits of the horizon, which rose high because of the altitude of the *Albatross*.

During the night there were no more of the shrill whistles of locomotives nor of the deeper notes of the river steamers to trouble the quiet of the starry firmament. Long bellowings occasionally reached the aeronef, then somewhat nearer the ground, from the herds of buffalo that roamed over the prairie in search of water and pasturage. And when they fell silent, the trampling of the grass under their feet produced a dull roaring like the rushing of a flood, and very different from the continuous whirring of the screws.

Then, from time to time, came the howl of a wolf, a fox, a wild cat, or a coyote, the *canis latrans*, whose name is justified by its sonorous bark.

Then, too, the penetrating odours of mint, and sage and absinthe mingled with the more powerful fragrance of the conifers which rose floating through the night air.

At last, clear among the noises heard from the ground, came a menacing yell, and this was not due to any coyote. It was the shout of a Redskin, which no backwoodsman could mistake for the cry of a wild beast.

The next day, the 15th of June, about five in the morning, Phil Evans left his cabin. Perhaps that day he would find himself confronting Robur the engineer? Anyhow, wanting to know why he had not appeared the day before, Evans addressed himself to the mate, Tom Turner.

Tom Turner was an Englishman of about forty-five, broad in the shoulders and short in the legs, a man of iron, with one of those enormous heads characteristic of Hogarth, such as that painter of every variety of Anglo-Saxon ugliness had at the tip of his brush. His physiognomy indeed was not at all encouraging.

'Shall we see the engineer today?' asked Phil Evans.

'I don't know,' said Turner.

'I'm not asking you if he's gone away.'

'Perhaps.'

'Nor when he'll get back?'

'Probably when he's finished his cruise.'

Thereupon Tom went into his cabin.

With this reply they had to be content. It was the less reassuring, as on consulting the compass they realized that the *Albatross* was still steering north-west.

What a contrast, then, between the arid territory of the Bad Lands they had left during the night and the landscape now unrolling on the surface below.

The aeronef, having gone more than six hundred miles from Omaha, was now over a country which Phil Evans could not recognize, for the good reason that he had never been there before. A few forts to keep the Indians in order crowned the bluffs with their geometric lines, formed rather by palisades than by walls. There were few villages and few inhabitants in this country, so different from the gold-bearing lands of Colorado several degrees to the south.

In the distance, very confusedly as yet, began to appear a long line of mountain crests, outlined in fire by the rising sun.

They were the Rocky Mountains.

For the first time that morning Uncle Prudent and Phil Evans felt rather cold. This fall of the temperature was not due to a change in the weather, for the sun was shining in superb splendour.

'It must be because the *Albatross* is higher in the air,' said Phil Evans.

In fact the barometer outside the central deck-house had fallen to twenty inches, indicating a height of about 10,000 feet. The aeronef had to keep fairly high because of the inequalities of the ground. Indeed, an hour before she had been at a height of 13,000 feet, and behind her were mountains covered with the eternal snows.

There was nothing in the memory of Uncle Prudent and his companion to tell them where they were. During the night the *Albatross* had made several changes of course to north and south at tremendous speed, and that was enough to bewilder them.

After talking over several possibilities more or less plausible they decided that this territory, framed in a circle of mountains, must be that district declared by an Act of Congress in March 1872, to be a National Park of the United States.

It was, indeed, that strange region. It well merited the name of a park—a park with mountains for hills, lakes for pools, rivers for streamlets, circles of mountains for rock-gardens, and for fountains, geysers of marvellous power.

In a few minutes the *Albatross* glided above the Yellowstone River, leaving Mount Stevenson on the right, and coasting the large lake which bears the name of the stream. What variety was displayed on the banks of this basin, whose shores, strewn as they were with obsidian and tiny crystals, reflected the sunlight on their myriad facets. What play of fancy was the arrangement of the islands on its surface; what blue reflections were given by this gigantic mirror! And around the lake, one

of the most elevated of the terrestrial globe, what clouds of birds—pelicans, swans, gulls and geese, barnacle geese and divers! Here and there the steep banks were clothed with a fleece of green trees, pines and larches, and at the foot of the escarpments bubbled innumerable white fumaroles, in which the internal fires keep the water in a state of continual ebullition.

For the cook this, if ever, was the chance of securing an ample supply of trout, the only fish that the waters of the Yellowstone Lake breeds in myriads. But the *Albatross* kept at such a height that there was no chance of obtaining a catch which would assuredly have been miraculous.

In three-quarters of an hour the lake was passed, and a little farther on the region of these geysers, which rival the finest in Iceland. Leaning over the rail, Uncle Prudent and Phil Evans watched the liquid columns which leaped up as though to provide the aeronef with a new element. There were the 'Fan', where the jets shot forth in radiating sheets; the 'Fortress', which seemed to be defended by waterspouts; the 'Old Faithful', with its rainbow-crowned plume; the 'Giant', whose internal pressure vomits a vertical torrent twenty feet in girth and more than two hundred feet high.

Robur must have been familiar with this incomparable spectacle, one might say unique in all the world, for he did not appear on deck. Was it, then, only for the pleasure of his guests that he had brought the aeronef above this national domain? If so, he did not come to receive their thanks. He did not even put himself out during their audacious voyage through the Rocky Mountains, which the *Albatross* reached at about seven.

As is well known, this orographic system stretches like an enormous backbone from the loins to the neck of North America, and is prolonged into the Mexican Andes. It extends for over two thousand miles, dominated by James Peak, whose summit attains a height of almost twelve thousand feet.

By increasing the speed of her wings, like a bird soaring

aloft in its flight, the *Albatross* could have cleared the highest ridges of the chain to make a sudden descent over Oregon or Utah. But the manoeuvre was unnecessary. The passes allowed the barrier to be traversed without its higher ridges being crossed. There are many of these canyons, or cols, more or less narrow, through which they could glide, such as Bridger Gap, through which the Pacific Railway runs into the Mormon territory, and others to its north and south.

It was through one of these that the *Albatross* headed, after reducing speed so as not to dash against the walls of the canyon. The steersman, with a sureness of hand rendered even more effective by the extreme sensitiveness of the rudder, manoeuvred his craft as if she were a yacht of the finest type in a race of the Royal Thames Club. It was really amazing, and, in spite of the jealousy felt by these two enemies of 'heavier than air', they could not help marvelling at the perfection of this engine of aerial locomotion.

In less than two hours and a half they had traversed the Rockies, and the *Albatross* had resumed her former speed of sixty miles an hour. She was steering south-west so as to cut across Utah diagonally and meantime she was nearing the ground. She had even dropped to a height of several hundred yards when the sound of a whistle attracted the attention of Uncle Prudent and Phil Evans.

It was a train of the Pacific Railway on the road to Salt Lake City.

And then, in obedience to an order secretly given, the *Albatross* dropped still lower so as to follow the train, which was going at full speed. She was at once sighted. A few heads showed themselves at the windows of the cars. Then numerous passengers crowded the gangways by which the American 'cars' are linked together. Some did not even hesitate to climb on the roof to get a better view of the flying-machine. Cheers came floating up through the air, but their effect was not to make Robur appear.

The *Albatross* continued her descent, slowing her suspensory

screws and moderating her speed so as not to leave behind her the train she could so easily have outdistanced. She flew above it like an enormous beetle, though she might well have been a gigantic bird of prey. She swerved to right and left, and sped on in front, returned and proudly displayed her black flag with the golden sun, to which the conductor of the train replied by waving the bunting with the thirty-seven stars of the American Union.

In vain the prisoners, anxious to take advantage of the opportunity, tried to make themselves known. In vain the president of the Weldon Institute roared at the top of his voice — 'I am Uncle Prudent of Philadelphia!'

And the secretary — 'I am Phil Evans, his colleague!'

Their shouts were lost in the thousands of cheers with which the passengers greeted their journey.

Three or four of the crew of the *Albatross* had appeared on the deck, and one of them, like sailors passing a ship less speedy than their own, held a rope out towards the train, an ironical way of offering a tow.

Then the *Albatross* resumed her usual speed and in half an hour she had left that express behind, and soon the last traces of its steam had vanished.

About one o'clock there appeared a vast disk, which reflected the solar rays as if it were an immense mirror.

'That ought to be the Mormon capital, Salt Lake City,' said Uncle Prudent.

And so, indeed, it was, and the disk was the circular roof of the Tabernacle, where ten thousand Saints can worship at their ease. Like a convex mirror, it scattered the rays of the sun in all directions.

There extended that great city, at the foot of the Wasatch Mountains, clothed half-way up with cedars and pines, on the banks of the River Jordan through which the waters of the Utah enter the Great Salt Lake. Beneath the aeronef lay the draught-board in which most American cities are planned — a draught-board of which it could be said that there were 'more queens

than squares', for polygamy was then in favour among the Mormons. All around was a well-cared for, well-cultivated country, in which the flocks of sheep might be counted in thousands.

But the whole thing vanished like a shadow, and the *Albatross* sped on her way to the south-west with a speed which did not fail to make itself felt, for it surpassed that of the wind. Soon she was flying above Nevada with its silver-bearing territory, which the Sierra separates from the gold-bearing lands of California.

'We shall certainly reach San Francisco before night,' said Phil Evans.

'And then?' replied Uncle Prudent.

It was six in the evening when the Sierra Nevada was crossed by the same pass, the Truckie, as that followed by the railway. Only a hundred and eighty miles then remained to be crossed to reach, if not San Francisco, at least Sacramento, the Californian capital.

Such was the speed given to the *Albatross* that, before eight, the dome of the Capitol rose over the western horizon, soon to vanish over that opposite.

At this moment Robur appeared on deck. The colleagues went up to him.

'Engineer Robur,' said Uncle Prudent, 'we're now leaving America! We think it's time for this joke to stop. .

'I never joke,' Robur answered.

He raised his hand. The *Albatross* swiftly dropped towards the ground, and at the same time it took up such a speed that they were driven into their cabin.

As soon as the door was shut, Uncle Prudent exclaimed, 'A bit more and I'd strangle him!'

'We've got to try to escape!' replied Phil Evans.

'Yes; cost what it may!'

A long murmur then reached them.

It was the roar of the surf breaking on the rocks of the seashore. It was the Pacific Ocean.

CHAPTER X

In Which the Albatross Covers Thousands of Miles Which End in a Prodigious Bound

UNCLE PRUDENT and Phil Evans had made up their minds to escape. If they would not have had to deal with the eight especially vigorous men who formed the aeronef's crew they might have tried to fight. Some bold venture might have given them the mastery and enabled them to descend somewhere in the United States. But as they were only two—Frycollin could only be regarded as a negligible quantity—this was not to be dreamed of. So, as force could not be used, recourse must be had to strategy as soon as the *Albatross* grounded. Such was what Phil Evans tried to impress on his angry colleague, though he was in constant fear that Uncle Prudent might aggravate the position by some premature act of violence.

Certainly this was not the time to attempt anything of the sort. The aeronef was sweeping along at high speed over the North Pacific. Next morning, June 16th, the coast was out of sight. And as the shore curves off from Vancouver Island up to the Aleutians—part of America ceded by Russia to the United States in 1867—it was highly probable that the *Albatross* would cross it at the end of the curve, provided her course did not change.

How long did the night seem to be to the two colleagues! With what haste they left their cabins! That morning when they came on deck the dawn had for some hours been silvering the eastern horizon. They were nearing the June solstice, the longest day of the year in the northern hemisphere, when along the sixtieth parallel there is hardly any night.

Either from custom or purposely, Robur was in no hurry to leave his deck-house. When he came out this morning he

contented himself with bowing to his two guests as he went to the stern of the aeronef.

And now, his eyes red with sleeplessness and a dazed look, Frycollin ventured out of his cabin. He tottered along like a man whose foot feels it is not on solid ground. His first glance was at the suspensory screws, which were working with gratifying regularity but without overmuch haste.

That done, the Negro stumbled along to the rail, and grasped it with both hands, to make sure of his balance. Plainly he wished to view the scene over which the *Albatross* was flying at the height of seven thousand feet at most.

It took much effort for him to risk such a venture. He must have been brave indeed to submit himself to such a test.

At first he kept himself well back behind the rail. Then he shook it to make sure it was firm; then he drew himself up; then he bent forward, then he stretched out his head. It need not be said that while he was executing these manoeuvres he kept his eyes shut. At last he opened them.

What a yell! And how quickly he fled! And how deeply his head sank back into his shoulders!

At the bottom of the abyss he had seen the broad ocean. His hair would have stood on end — if it had not been wool.

'The sea! The sea!' he cried.

And Frycollin would have fallen on the deck had not the cook opened his arms to receive him.

This cook was a Frenchman, and probably a Gascon, although he was called François Tapage. If he was not a Gascon he must in his childhood have inhaled the breezes of the Garonne. How did this François Tapage find himself in the service of the engineer? By what chain of accidents had he become one of the crew of the *Albatross*? We can hardly say; but in any case the crafty fellow spoke English like a Yankee.

'Eh, stand up! Up!' said he, lifting the Negro with a vigorous jerk.

'Master Tapage!' said the poor devil, giving a despairing look at the screws.

'What do you want, Frycollin?'

'Does this thing ever smash?'

'No, but it will end up by smashing

'Why? Why?'

'Because, as they say in my country, all things get weary, all things pass away, all things smash.'¹

'And the sea is beneath us!'

'If we are to fall, it is better to fall in the sea.

'We shall be drowned.'

'We shall be drowned, but we shall not be smashed to smith-ereens,' Tapage replied, emphasizing every syllable.

Next moment, Frycollin was on all fours, creeping to the back of his cabin.

During this day the aeronef made only moderate speed. She seemed to skim the surface of the calm sea, which lay glistening in the sunshine about a hundred feet beneath.

Uncle Prudent and his companion stayed in their cabin, so as not to meet Robur, who was walking about smoking, now alone and now talking to the mate. Only half the screws were working, and that was enough to keep the apparatus afloat in the lower zones of the atmosphere.

The crew, as a change from the ordinary routine, might have enjoyed fishing, had there been any sign of fish; but all that could be seen on the surface of the sea were a few of those yellow-bellied whales which measure about eighty feet in length. These are the most formidable cetaceans in the northern seas, and whalers take care not to attack them, for their strength is prodigious. However, if they were to harpoon one of these whales, either with the ordinary harpoon, the Fletcher rocket, or the javelin-bomb, of which there was an assortment on board, this could have been done without danger.

But what was the good of such useless massacre? Doubtless to show off the powers of the aeronef to the members of the

¹ In the original, this is the epigrammatic—'tout lasse, tout passe, tout casse'.—I.O.E.

Weldon Institute. And so Robur gave orders to hunt one of these monstrous cetaceans.

At the shout of 'A whale! A whale!' Uncle Prudent and Phil Evans came out of their cabin. Perhaps there might be some whaler in sight! If so, to escape from their flying prison they were both capable of jumping into the sea on the chance of being picked up by some vessel.

Already all the crew were waiting on deck.

'Shall we try it, Mr Robur?' asked Tom Turner.

'Yes, Tom,' replied the engineer.

In the engine-room, the assistant engineer and his two mates were at their posts ready to obey the order signalled to them. The *Albatross* was not slow in dropping towards the sea, and remained about fifty feet above it.

There was no ship in sight—that the two colleagues soon realized—nor was there any land to be seen to which they could swim, providing Robur made no attempt to recapture them.

Several jets of vapour and water from the blow-holes soon announced the presence of the whales as they came to the surface to breathe.

Tom Turner, helped by one of his comrades, was in the bow. Within his reach was one of those javelin-bombs, of Californian make, which are shot from a cross-bow, a sort of metallic cylinder ending in a cylindrical shell armed with a shaft having a barbed point.

On the roof of the forward deck-house, Robur, who had just climbed on to it, was signalling with his right hand to the engineers, with his left to the steersman. He thus controlled the aeronef in every way, horizontally and vertically, and it cannot be imagined with what speed and precision the *Albatross* answered to his orders. She seemed a living being, whose soul he was.

'A whale! A whale!' Tom Turner shouted again. The back of a cetacean was indeed emerging from the surface about four cable-lengths away.

The *Albatross* swept towards it, and when she was within sixty feet of it she came to a halt.

Tom Turner shouldered the cross-bow, which had been resting against a cleat on the rail. He fired, and the projectile, attached to a long line whose coil was secured to the deck, hit the whale's body. The shell, filled with some fulminating material, exploded, and in bursting it shot out a small two-barbed harpoon which embedded itself in the animal's flesh.

Uncle Prudent and Phil Evans, much against their will, were deeply interested in the spectacle.

The whale, seriously wounded, gave the sea such a slap with his tail that the water splashed up over the bow of the aeronef. The animal then plunged to a great depth, drawing after it the harpoon line, which had been previously wetted in a tub of water to prevent its taking fire. When the whale rose to the surface it started off at full speed towards the north.

The speed with which the *Albatross* was towed after it may well be imagined. Her propellers had, of course, been stopped. The whale was allowed to go wherever it liked and the ship followed it. Turner stood ready to cut the line in case a fresh plunge should render the tow dangerous.

For half an hour, and perhaps for a distance of six miles, the *Albatross* was thus dragged along, but it was clear that the whale was tiring. Then, at a gesture from Robur, the assistant engineers put the propellers into reverse, so as to offer a certain resistance to the whale, which was gradually drawn closer.

Soon the aeronef was gliding about twenty-five feet above it. The creature's tail was beating the waters with incredible violence, and as it rolled over it produced an enormous wave.

Suddenly the whale reared up, to take a header, so to speak, and then dived with such rapidity that Tom Turner barely had time to let the line run out.

The aeronef was suddenly dragged to the very surface of the water. A whirlpool was formed where the animal had disappeared. A wave washed over the deck as it does on the prow of a ship running against the wind.

Luckily Tom Turner had cut the line with a blow of his axe, and the *Albatross*, released from her tug, sprang aloft to six hundred feet under the impulse of her ascensional screws. Robur had manoeuvred his ship without losing his coolness for a moment.

A few minutes later the whale returned to the surface—dead. From every side the birds flew down on to the carcass, and their cries were enough to deafen the Congress. The *Albatross*, without stopping to share in the spoil, resumed her course to the west.

Next day, on June 17th, at about six in the morning, land was sighted on the horizon. This was the peninsula of Alaska and the long range of breakers of the Aleutian Islands.

The *Albatross* glided over this barrier where the fur seals swarm for the benefit of the Russo-American Company. Good business, the capture of these animals, from six to seven feet long, russet in colour, and weighing from three hundred to four hundred pounds. There they were in interminable files, ranged in battle order and to be reckoned by thousands.

Although they were not disturbed by the flight of the *Albatross*, it was not so with the ducks, divers, and loons, whose raucous cries filled the air as they disappeared beneath the waves and which fled at though before some terrible monster.

The twelve hundred miles of the Behring Sea between the first of the Aleutians and the far end of Kamtschatka were traversed during the twenty-four hours of this day and the following night. Uncle Prudent and Phil Evans found that that there was no present chance of putting their project of escape into execution. It was neither on the deserted shores of farthest Asia, nor on the coast of the sea of Okhotsk that they could get away with any hope of success. The *Albatross* was clearly bound for Japan or China, and it was there, although it was not perhaps very prudent to trust themselves to the mercies of the Chinese or Japanese, that the two friends had made up their minds to take flight if the aeronef stopped at any point whatever of these territories.

But would she stop? She was not like a bird which grows fatigued by too long a flight, or like a balloon which has to descend for lack of gas. She had food for many weeks yet, and her organs defied all weakness and weariness.

During June 18th she made one bound across the Kamtschatka peninsula, where Petropaulovski and the volcano of Kloutschew could scarcely be glimpsed. Then she made another leap across the Sea of Okhotsk at about the latitude of the Kurile Isles, which seemed to be a breakwater pierced by hundreds of narrow channels. On the 19th, in the morning, the *Albatross* reached the La Perouse strait, between Saghalien and the northernmost point of Japan, into which flows the mouth of the Great Siberian river, the Amoor.

Then there came on a fog so dense that the aeronef had to stay within it; she had no need to rise above to be navigated. At her altitude there was no obstacle to fear, no tall buildings to hinder her passage, no mountains against which there was a risk of being shattered in her flight. The country was only slightly hilly. But the fog was very unpleasant, and made everything on board very damp.

All they needed then was to get above this layer of mist, which was nearly thirteen hundred feet thick. So the lifting screws were speeded up and soon, above the fog, the *Albatross* was in the sunny regions of the sky.

In these circumstances, Uncle Prudent and Phil Evans would have found some difficulty in carrying out their plan of escape, even admitting that they could have left the aeronef.

That way, as Robur passed them, he stopped for a moment, and without seeming to attach any importance to it:

'Gentlemen,' he said, 'a sailing-ship or a steamship lost in a fog from which it cannot escape is always greatly delayed. She cannot move without whistling or sounding her fog-horn. She has to reduce her speed, at any instant she has to fear a collision. The *Albatross* cares nothing for this. What does fog matter to her? She can leave it when she chooses. The whole of space is hers. The whole of space.'

And Robur quietly went on with his stroll without waiting for an answer, and the puffs of his pipe were lost in the blue of the sky.

'Uncle Prudent,' commented Phil Evans, 'this astonishing *Albatross* doesn't seem to have anything to fear.'

'That we shall see!' replied the president of the Weldon Institute.

The fog lasted three days, June 19th, 20th and 21st, with regrettable persistence. The aeronef had to rise to clear the Japanese mountain of Fujiyama. But when the curtain of mist was rent open there lay below them an immense city, with its palace, villas, gardens, and parks. Even without seeing it Robur would have recognized it by the barking of the myriads of dogs, the cries of the birds of prey, and, above all, by the cadaverous odour which the bodies of its executed criminals gave off into space.

The two colleagues were on the deck while the engineer was taking his observations in case he had to continue his course through the fog.

'Gentlemen,' said he, 'I have no reason for concealing from you that this town is Tokio, the capital of Japan.'

Uncle Prudent did not reply. In the presence of the engineer he was almost choked, as if his lungs were short of air.

'This view of Tokio,' continued Robur, 'is very curious.

'Curious as it may be—' replied Phil Evans.

'It is not as good as Pekin?' interrupted the engineer. 'That is what I think, and very shortly you'll be able to judge for yourselves.'

Impossible to be more amiable!

The *Albatross*, then gliding south-east, changed her course four points, so as to seek a new route towards the east.

During the night the fog cleared. There were symptoms of an approaching typhoon—a rapid fall of the barometer, the disappearance of the vapour, large clouds of ellipsoidal form clinging to a copper sky; on the opposite horizon, long streaks of carmine on a slate-coloured field, with a large sector quite

clear in the north. Then the sea grew smooth and calm and at sunset assumed a forbidding scarlet hue.

Fortunately the typhoon unchained itself more to the south, and had no other result than to sweep away the mist accumulated during the last three days.

In an hour they had traversed the hundred and twenty-five miles of the Korean strait and reached the tip of the peninsula; while the typhoon was striking the south-eastern coast of China, the *Albatross* was over the Yellow Sea. During the 22nd and 23rd she was over the Gulf of Pechelee, and on the 24th she was ascending the valley of the Peiho and hovering over the capital of the Celestial Empire.

Leaning over the rail, the two colleagues, as the engineer had told them, could see distinctly the immense city, the wall which divides it into two parts—the Manchu town and the Chinese town—the twelve suburbs which surround it, the large boulevards which radiate from its centre, the temples with their green and yellow roofs bathed in the rising sun, the grounds surrounding the houses of the mandarins; then in the middle of the Manchu town the eighteen hundred acres of the Yellow town, with its pagodas, its imperial gardens, its artificial lakes, its mountain of coal which towers above the capital; and in the centre of the Yellow town, like a square of a Chinese puzzle enclosed in another, the Red town, the imperial palace with all the freaks of its outrageous architecture.

Below the *Albatross* the air was, at that moment, filled with a singular harmony, like a concert of Æolian harps. In the air flew a hundred kites of different forms made of sheets of palm-leaf or pandanus, and having at their upper end a sort of bow of light wood with a thin sliver of bamboo beneath. In the breath of the wind these slivers, with all their notes varied like those of a harmonica, gave forth a most melancholy murmuring. It seemed as though in that place they were breathing musical oxygen.

It suited Robur's whim to fly near this aerial orchestra, and

the *Albatross* slowed as she bathed in the sonorous waves which the kites were emitting into the atmosphere.

But suddenly an extraordinary effect was produced amongst that innumerable population. Blows on the tomtoms and other formidable instruments of the Chinese orchestra, gun shots by the thousand, mortars fired by the hundred, all were brought into play to scare away the aeronef. Although the Chinese astronomers might have realized that this aerial machine was the one which had given rise to so many disputes, it was to the millions of Celestials, from the humblest peasant to the most highly buttoned mandarin, a terrifying monster appearing in the Buddhist sky.

The crew of the impregnable *Albatross* troubled themselves very little about these demonstrations. But the strings which held the kites to pegs fixed in the imperial gardens were quickly cut or hauled in; of these contrivances, some were soon pulled to the ground while their notes rose higher, others fell like a bird shot through the wings whose song ends with its last sigh.

A noisy fanfare, escaped from Tom Turner's trumpet, rang out over the capital and drowned the final notes of the aerial concert. It did not interrupt the terrestrial fusillade. At last, when a bomb burst a few feet from the deck of the *Albatross*, she mounted into the inaccessible regions of the sky.

What happened during the next few days? Nothing of which the prisoners could take advantage. What course did the aeronef take? Still to the south-west — which showed she was going towards India.

Twelve hours after leaving Pekin Uncle Prudent and Phil Evans caught a glimpse of the Great Wall on the boundary of Chen-Si. Then, avoiding the Lung Mountains, they passed over the valley of the Hoangho and crossed the Chinese border on the Thibetan side.

Thibet — high table-lands devoid of vegetation, and here and there snowy peaks and barren ravines, torrents fed by glaciers,

depressions with glittering beds of salt, lakes surrounded by luxurious forests.

The barometer, fallen to about eighteen inches, indicated an altitude of thirteen thousand feet above sea level. At that height the temperature, although it was in the warmest months of the northern hemisphere, was little above freezing. This cold, combined with the speed of the *Albatross*, made conditions almost unbearable, and although the two colleagues had warm travelling wraps, they preferred to go back into their cabin.

It need hardly be said that to keep the aeronef aloft in this rarefied air the lifting screws had to be driven at an extreme speed. But they worked with perfect regularity, and the rustling of their wings almost acted as a lullaby.

That day, Garlock, a town of western Thibet, the capital province of Gari Khorsum, might have seen the *Albatross* passing by and looking the size of a carrier pigeon.

On June 27th, Uncle Prudent and Phil Evans sighted an enormous barrier, dominated by several lofty peaks, lost in the snows and forming the horizon. Leaning against the fore-cabin, so as to withstand the speed of the ship, they watched these colossal masses, which seemed to be running ahead of the aeronef.

'The Himalayas, no doubt,' said Phil Evans; 'Robur is probably skirting their base, so as to cross into India.'

'So much the worse,' answered Uncle Prudent. 'On that immense territory perhaps we can —'

'Unless he goes round by Burma to the east, or Nepal to the west.'

'Anyhow, I defy him to go through them.'

'Indeed!' said a voice.

The next day, June 28th, the *Albatross* was facing the gigantic mass above the province of Zang. On the other side of the Himalayas was Nepal.

Three chains, indeed, cut the road into India from the north. The two most northerly, between which the aeronef

was gliding like a ship between enormous reefs, are the first steps of the Central Asian barrier. The first was the Kuen Lung, the other the Karakorum, bordering the longitudinal valley parallel to the Himalayas, almost on the watershed from which the Indus flows to the west and the Brahmapootra to the east.

What a superb orographic system! More than two hundred summits already measured, seventeen exceeding 25,000 feet. Before the *Albatross*, at 29,000 feet, towered Mount Everest. On the right, Dhawalagiri, 26,800 feet high; on the left Kinchagjuna, 25,780 feet high, relegated to second place since Mount Everest was measured.

Evidently Robur did not intend to go over the crest of these peaks; but doubtless he knew the passes of the Himalayas, among others that of Ibi Assim, which the brothers Schlagintweit traversed in 1856 at a height of 22,000 feet. And towards it he went direct.

Several hair-raising and very painful hours followed. But though the rarefaction of the air was not such as to necessitate recourse to the special apparatus for renewing the oxygen in the cabins, the cold was excessive.

Robur, erect in the bow, his sturdy figure wrapped in a great-coat, gave the orders. Tom Turner was at the helm. The assistant engineer kept an attentive watch on his batteries, the acid in which fortunately ran no risk of freezing. The screws, running at the full strength of the current, sounded ever shriller and shriller, but extremely loud, in spite of the lower density of the air. The barometer fell to twelve inches, indicating an altitude of 23,000 feet.

Magnificent formation of the chaos of mountains! Everywhere white summits. No lakes, but glaciers fell ten thousand feet towards their base. No herbage, only some sparse phanerogams on the limit of vegetable life. None of those magnificent pines and cedars which form splendid forests on the lower flanks of the range. None of those gigantic ferns and interminable parasites stretching from tree to tree as in the under-

growth of the jungle. No animals—no wild horses, or yaks, or Thibetan cattle. Sometimes a gazelle astray in the heights. No birds, save a few pairs of those crows which can rise to the utmost limits of the respirable air.

The pass at last traversed, the *Albatross* began to descend. At the end of the col, beyond the forest region there was nothing but an immense plain stretching far and wide.

Then Robur stepped up to his guests, and in a pleasant voice—

‘India, gentlemen!’ he told them.

CHAPTER XI

In Which it is Seen How and Why Frycollin the Valet Was Towed

THE ENGINEER had no intention of taking his apparatus over the wondrous lands of Hindostan. To cross the Himalayas to show what an admirable engine of locomotion he commanded; to convince even those who would not be convinced—that was no doubt all he wished to do. So was the *Albatross* to be called perfect, though perfection is not of this world? That remained to be seen.

But if in their hearts Uncle Prudent and his colleague could not help admiring the power of such an engine of aerial locomotion, they did not let this appear. All they thought of was a chance of escape. They did not even admire the superb spectacle offered to them as the *Albatross* flew along the picturesque glades of the Punjab.

At the base of the Himalayas there runs a marshy belt of country, which emits malarious vapours, the Terai, in which fever is endemic. But this did not interfere with the *Albatross*, or affect the health of her crew. She rose without undue haste towards the angle which India makes with China and Turkestan. On June 29th, in the first hours of the morning, there opened before her the incomparable valley of Cashmere.

Yes! Incomparable is this gorge between the greater and lesser Himalayas! Furrowed by the buttresses where the mighty range dies out in the basin of the Hydaspes, it is watered by the capricious meanders of the river which saw the struggle between the armies of Porus and Alexander, when India and Greece were at grips in Central Asia. It is still there, that Hydaspes, although the two towns founded by the Macedonian in remembrance of his victory have so completely disappeared that their very situation is unknown.

During the morning the aeronef was over Serinuggur, better known under the name of Cashmere. Uncle Prudent and his companion beheld a superb city stretching along both banks of the river; its wooden bridges stretched like threads, its villas and their balconies standing out in bold outline, its hills shaded by tall poplars, its roofs grassed over and looking like great molehills; its numerous canals, with boats like nut-shells, and boatmen like ants; its palaces, temples, kiosks, mosques, and bungalows doubled by their reflection in the waters; then the ancient citadel of the Hari-Parvata placed on the slope of the hill like the most important of the forts of Paris on the crest of Mont Valerien.

'That would be Venice,' said Phil Evans, 'if we were in Europe.'

'And if we were in Europe,' answered Uncle Prudent, 'we'd know how to find the way back to America.'

The *Albatross* did not linger over the lake through which the river flows, but continued her flight down the valley of the Hydaspes.

For but half an hour, dropping within thirty feet of the river, she remained stationary. Then, with an india-rubber pipe, Tom Turner and his men busied themselves replenishing their water-supply, which was drawn up by a pump worked by the accumulátors.

Uncle Prudent and Phil Evans stood watching the operation. The same idea had occurred to each of them. They were only a few feet from the surface of the stream, within reach of its banks. They were both good swimmers. A dive would restore their liberty; and once they had reached the river, how could Robur get them back? For his propellers to work, didn't he have to keep at least six feet above the lake?

In a moment all the chances, pro and con, flashed through their minds. In a moment they had weighed them up. Then the prisoners were rushing to throw themselves overboard when several pairs of hands fell upon their shoulders.

They had been watched; and flight was impossible. This

time they did not yield without resisting. They tried to throw off those who held them. But they were sturdy fellows, these men of the *Albatross*.

'Gentlemen,' was all the engineer said, 'when people have the pleasure of travelling with Robur the Conqueror, as you have so aptly named him, on his admirable *Albatross*, they do not leave him in that way . . . by taking French leave. I will even add that they never leave him.'

Phil Evans restrained his colleague, who was about to commit some act of violence. They retired to their cabin, resolved to escape, even if it cost them their lives, and no matter where.

The *Albatross* resumed her course to the west. During the day she passed at moderate speed over Cabulistan, catching a momentary glimpse of its capital, and crossed the frontier of the kingdom of Herat, nearly seven hundred miles from Cashmere.

In these much-disputed countries, upon this route, open for the Russians to the English possessions in India, appeared many columns and convoys, and, in a word, everything that constitutes the personnel and material of an army on the march. Heard also were the roar of cannon and the crackling of musketry. But the engineer never meddled with the affairs of others when it was not a question of honour or humanity. He passed on. If Herat, as we are told, is the key of Central Asia, whether it were kept in an English or Muscovite pocket mattered little to him. Terrestrial interests no longer concerned the bold fellow who had made the air his domain.

The country was not slow to disappear beneath one of those sandstorms which are only too frequent in these regions. The wind, called the 'tebbad', bears along the seeds of fever in the impalpable dust raised in its passage. And how many caravans perish in its eddies!

To escape the dust, which might interfere with the working of the machinery, the *Albatross* sought a purer atmosphere at six thousand feet.

And thus vanished the Persian frontier and the country's

broad but invisible plains. The speed was quite moderate, although there were no reefs to fear. Indeed, though the map shows a few mountains, these are of moderate altitude. But on approaching the capital, she had to steer clear of Demavend, whose snowy peak rises some 22,000 feet, and then of the Elburz chain at whose foot Teheran is built.

At dawn on July 2nd, the peak of Demavend emerged from the sandstorm, so the *Albatross* steered over the town, which the wind had wrapped in a cloud of fine dust. But, about ten in the morning the moats that surround it could be seen. In their midst was the Shah's palace, with its walls covered with porcelain tiles, and its ornamental lakes, which seemed like huge turquoises of dazzling blue.

It was but a glimpse. Thence the *Albatross* swerved northwards. A few hours later she was over a little town built at a northern angle of the Persian frontier, on the shores of a vast expanse of water which stretched away out of sight to the north and east.

The town was Ashurada, the most southerly of the Russian stations. That expanse of water was a sea. It was the Caspian.

No more eddies of sand. There was a view of a group of European houses arranged along a promontory and dominated by a church tower.

The *Albatross* swooped down towards the surface of the sea, whose waters are 300 feet below the level of the ocean. Towards evening she was running above the coast—formerly belonging to Turkestan, now to Russia—and in the morning of the 3rd of July she was about 300 feet above the Caspian.

No land in sight, either on the Asiatic or European side. On the surface of the sea a few white sails swollen by the breeze. These were native vessels recognizable by their peculiar rig—kesebeys, with two masts; kayuks, the old pirate-boats, with one mast; teimils, smaller craft for trading or fishing. Here and there a few puffs of smoke reached the *Albatross* from the funnels of the Ashurada steamers by which the Russians police these Turcoman waters.

That morning Tom Turner was talking to the cook, Tapage, and to one of his questions he replied —

‘Yes; we’ll stay about forty-eight hours over the Caspian.’

‘Good!’ replied the cook; ‘then I suppose we can have some fishing.’

‘Just as you say.’

If they were to take forty-eight hours to cross the Caspian, which is some 625 miles long and 200 wide, that was because the speed of the *Albatross* would be much reduced; and while fishing was going on she would stop altogether.

Tom Turner’s reply was heard by Phil Evans, who was then in the bow, where Frycollin kept on overwhelming him with his piteous pleadings to be put ‘on the ground’.

Without replying to this preposterous request, Evans returned aft to find Uncle Prudent; and there, taking care not to be overheard, he reported the conversation between Tom Turner and the cook.

‘Phil Evans,’ said Uncle Prudent, ‘I think we can be under no illusion as to this scoundrel’s intentions regarding us.’

‘None,’ said Phil Evans. ‘He’ll only give us our liberty when it suits him — if he ever does.’

‘In that case we must risk everything to get away from the *Albatross*.’

‘A fine piece of work, it must be admitted!’

‘Quite likely,’ agreed Uncle Prudent; ‘but she’s the work of a scoundrel who detains us on board in defiance of all right. She’s a permanent danger for our friends and ourselves. If we can’t manage to destroy her . . .’

‘Let’s begin by getting away!’ answered Phil Evans; ‘and then we’ll see.’

‘Just so,’ said Uncle Prudent. ‘And we must take any chance we get. The *Albatross* is certainly going to traverse the Caspian and cruise across Europe, either north over Russia or west over the southern countries. Well, if we can manage to get our feet on any ground this side of the Atlantic, we’ll be safe. And we ought to be ready at any moment.’

'But,' asked Evans, 'how are we to get away?'

'Listen to me,' said Uncle Prudent. 'It sometimes happens during the night that the *Albatross* flies only a few hundred feet from the ground. Now on board there are several ropes of that length, and, with a little pluck we might slide down them—'

'Yes,' Evans replied. 'If it comes to that I shan't hesitate.'

'I'll add that at night there's nobody about except the steersman at the stern. Now one of the cables is coiled up in the prow and we ought to be able to uncoil it without being seen or heard.'

'Good! I am glad to see you've got cooler: that's better for business. But now here we are over the Caspian, with several ships in sight. The *Albatross* is going down to fish. Can't we take advantage of it?'

'Sh! They're watching even when we don't think they are,' said Uncle Prudent. 'You saw that when we tried to jump into the Hydaspes.'

'And who knows that they don't watch us at night?' asked Evans.

'Well, we must put an end to this; be done with this *Albatross* and her master.'

It will be seen how in the excitement of their anger the colleagues—Uncle Prudent in particular—could be led to commit the rashest acts, maybe the least likely to lead to their own safety. The sense of their impotence, the ironical disdain with which Robur treated them, the brutal remarks he indulged in—all contributed towards intensifying their aggravation, which daily grew more manifest.

That very day something new almost brought about a most regrettable altercation between Robur and his guests. This was provoked by Frycollin. Finding himself above the boundless sea, the coward was seized with another fit of terror. Like a child, like the Negro he was, he gave himself over to groaning and protesting and crying, and writhing in a thousand contortions and grimaces.

'I want to get out! . . . I want to get out!' he wailed. 'I'm not a bird! . . . I wasn't made to fly! . . . I want to be put down, now!'

It goes without saying that Uncle Prudent, as may be imagined, did not attempt to quiet him—on the contrary. These howlings seemed to make Robur singularly impatient.

As Tom Turner and his companions were getting ready to fish, the engineer, to get rid of Frycollin, ordered them to shut him up in his cabin. But the Negro kept on struggling and banging at the wall and howling at the top of his voice.

It was noon. The *Albatross* kept only about fifteen or twenty feet above the water. A few ships, terrified at the sight of her, took flight. That part of the Caspian would soon be completely deserted.

As may be guessed, in a situation which they could escape from by simply taking a header, the two colleagues were bound to be, and were, the object of a careful watch. Even supposing they jumped overboard they would be picked up by the india-rubber boat. So there was nothing to be done during the fishing, which Phil Evans intended to watch while Uncle Prudent, in his perpetual state of rage, retired to his cabin.

The Caspian Sea is known to be a volcanic depression in the ground. Into it flow the waters of the Volga, the Ural, the Kour, the Kouma, the Jemba, and others. Without the evaporation which relieves it of its overflow, this basin, with an area of 17,000 square miles, and a depth of from sixty to four hundred feet, would flood the low marshy ground to its north and east. Although this basin is not in communication with the Black Sea or the Sea of Aral, whose water-level is much higher, it contains very many fish—such fish, be it understood, as can live in its bitter waters, the bitterness being due to the naphtha flowing from the springs to its south.

On thinking of the change in the food the fishing would bring them, the crew of the *Albatross* did not attempt to conceal their delight.

'Look out!' shouted Turner, who had just harpooned a good-sized fish, not unlike a shark.

It was a splendid sturgeon seven feet long, the Russian Belouga, whose eggs when mixed with salt, vinegar, and white wine form caviare. Sturgeons fished from the river may be rather better than those from the sea; but these were welcomed warmly enough on board the *Albatross*.

But the best catches were made with the drag-nets, which brought up, higgledy-piggledy, carp, bream, salmon, salt-water pike, and a number of medium-sized sterlets, which wealthy gourmets have sent on alive to Astrakhan, Moscow, and Petersburg. These now passed direct from their natural element into the cook's kettle without any charge for transport.

Robur's men cheerfully hauled the nets in after the *Albatross* had dragged them for several miles. The Gascon, Tapage, certainly justified his name ('uproar') by his howls of delight. An hour's work sufficed to fill up the fish-tanks of the aeronef, and she steered northwards.

During the fishing Frycollin had never stopped shouting and kicking at his cabin wall and making an unbearable din.

'That cursed Negro won't be quiet, then?' asked Robur, completely out of patience.

'It seems to me, sir, that he's got a right to complain,' said Phil Evans.

'Yes, and I've got a right—the right to spare my ears,' replied Robur.

'Engineer Robur!' said Uncle Prudent, who had just appeared on deck.

'President of the Weldon Institute!'

They had stepped up to one another, and were looking into the whites of each other's eyes.

Then Robur shrugged his shoulders. 'On a rope's end,' he said.

Turner saw his meaning, and Frycollin was dragged out of his cabin.

Loud were his cries when the mate and one of the men

seized him and tied him into a tub, which they hitched on to a rope—one of those very ropes, in fact, that Uncle Prudent had intended to use.

The Negro at first thought he was going to be hanged. No! . . . he was only going to be hauled! ¹

The rope was paid out for a hundred feet and Frycollin found himself swinging in emptiness.

He could then shout at his ease. But fright contracted his larynx, and he was mute.

Uncle Prudent and Phil Evans endeavoured to prevent this performance. They were thrust aside.

'It's infamous! It's cowardly!' Uncle Prudent was beside himself with rage.

'Indeed!' answered Robur.

'It's an abuse of power against which I shall protest—and not only with words.'

'Protest away!'

'I'll get my revenge, Mr Robur.'

'Get it, Mr President of the Weldon Institute.'

'On you and your men.'

The crew began to close up with anything but benevolent intentions. Robur motioned them away.

'Yes, on you and your men!' Uncle Prudent repeated, his colleague in vain trying to calm him.

'Whenever you like!' replied the engineer.

'And in every possible way!'

'Enough!' said Robur, in a threatening tone. 'Enough! . . . There are plenty of other ropes on board. Hold your tongue; or, if not—like servant, like master!'

Uncle Prudent was silent, not because he was afraid, but because his wrath so choked him that Phil Evans had to lead him off to his cabin.

During the last hour the air had been strangely troubled. The symptoms could not be mistaken. A storm was threatening. The electric saturation of the atmosphere had become so

¹ A play on words in the original: not '*pendu*' but '*suspendu*'.—I.O.E.

great that about half-past two Robur witnessed a phenomenon he had never before seen.

In the north, whence the storm was travelling, rose spirals of half-luminous vapour — these were undoubtedly due to the difference in the electric charges of the various cloud-beds. The reflections of these bands sent myriads of lights running along the waves, growing in intensity as the sky began to darken.

The *Albatross* and the storm would not be long in meeting, for they were rushing towards each other.

And Frycollin? Well! Frycollin was still being towed — and towed is exactly the word, for the rope made such an angle with the aeronef, now going at over sixty knots an hour, that the tub was lagging somewhat behind her. His fear may well be imagined, for lightning was flashing around him, while the thunder was roaring in the depths of the sky.

The crew were busy preparing for the storm; either they would have to rise above it or to drive through its lowest layers. The *Albatross* was about three thousand feet above the sea when a clap of thunder roared with extreme violence. Suddenly the squall sprang up. In a few seconds the fiery clouds swept around her.

Phil Evans went to intercede for Frycollin, to ask for him to be brought back on board.

But Robur had not waited to be approached. He had already given orders. The rope was being hauled in, when suddenly there came an inexplicable slowing down of the rotation of the screws.

The engineer rushed to the central deck-house.

‘Power! More power!’ he shouted. ‘We must rise quickly and get higher than the storm!’

‘Impossible, sir!’

‘What’s the matter?’

‘The current is affected! It’s being interrupted!’ And, in fact, the *Albatross* was falling fast.

As happens to the current in telegraph wires during a storm,

electric action was failing in the accumulators of the aeronef. But what is only an inconvenience when it is a question of messages was here a terrible danger.

'Let her down, then,' said Robur, 'and let's get out of the electric zone! Keep cool, my lads!'

He climbed on to his quarter-deck and his crew went to their stations ready to carry out his orders.

Although the *Albatross* had sunk several hundred feet she was still in the thick of the cloud, in the midst of flashes playing around her like fireworks. She seemed to have been struck. The screws ran even more slowly, and what had begun as rather a hasty descent threatened to become a fall.

In less than a minute, it was clear they would get down to sea-level. Once they were immersed no power could drag them from the abyss.

Suddenly the electric cloud appeared above them. The *Albatross* was then only sixty feet from the crest of the waves. In two or three seconds the deck would be under water.

But Robur, seizing the exact moment, rushed to the central deck-house and seized the levers. He switched on the currents from the batteries, which were not neutralized by the electric tension of the surrounding atmosphere. In an instant he had restored the screws to their normal speed and checked the descent, keeping the *Albatross* a slight distance aloft while her propellers drove her swiftly out of reach of the storm, which she soon cleared.

Frycollin, of course, had taken a bath—though only for a few seconds. When he was dragged on deck he was as wet as if he had been to the bottom of the sea. As may well be imagined, there was no more crying.

Next day, July 4th, the *Albatross* passed the northern shore of the Caspian.

CHAPTER XII

In Which Uncle Prudent's Anger Increases as the Square of the Velocity

IF EVER Uncle Prudent and Phil Evans had to despair of escaping it was during the two days that followed. Did Robur suspect that it was not so easy to keep a watch on his prisoners while he was crossing Europe? Quite likely. He certainly knew that they had made up their minds to get away.

But any attempt to do so would simply be committing suicide. To jump from an express going sixty miles an hour is to risk one's life, but to jump from a 'rapide' going one hundred and twenty miles an hour would be to seek death.¹

And it was just this speed — the highest she could achieve — which was given to the *Albatross*. It exceeded the flight of the swallow, which is one hundred and twelve miles an hour.

For some time the wind was in the north-east, and favoured the *Albatross*, which followed the same course, roughly towards the west. But the wind began to drop, and it soon became impossible for the colleagues to stay on the deck without having their breath taken away by the speed of the displacement of air. On one occasion they would even have been blown overboard if they had not been held against the deck-house by the air pressure.

Luckily the steersman saw them through the windows of his cage, and an electric bell gave the alarm to the men in the fore-cabin. Four of them came aft, creeping along the deck.

Let those who have been at sea, on a ship braving a gale and beating to windward, remember what they felt, and they

¹ In French railway practice a 'rapide' is even faster than an 'express'.
—I.O.E.

will understand what the violence of such pressure was like. Only here it was the *Albatross* that produced it by her incomparable speed.

Indeed, the speed had to be reduced, and this enabled Uncle Prudent and Phil Evans to get back to their cabin. Inside the deck-houses the *Albatross* bore with her a breathable atmosphere.

But what strength the apparatus must have to be able to withstand such a speed! It was prodigious. The propellers spun round so swiftly that their movement was quite invisible, and it was with irresistible penetrative power that they screwed themselves through the air.

The last town sighted was Astrakhan, at the north end of the Caspian Sea. The *Star of the Desert*—no doubt some Russian poet called it this—has now sunk from the first magnitude to the fifth or sixth. This small seat of government had shown for an instant its old walls, crowned with their useless battlements, the ancient towers in the centre of the city, the mosques alongside modern churches, the cathedral with its five domes, gilded and dotted with stars looking like a piece cut out of the sky—all almost on a level with the mouth of the Volga, over a mile in width.

Thenceforward the flight of the *Albatross* became a kind of race through the heights of the sky, as if she had been harnessed to one of those fabulous hippogriffs which cleared a league at every stroke of the wing.

It was ten in the morning of the 4th of July when the aeronef, heading north-west, almost followed the valley of the Volga. The steppes of the Don and the Ural sped past on each side of the river. Even had it been possible to get a glimpse of these vast territories there would hardly be time to count the towns and villages. In the evening the aeronef soared over Moscow without even saluting the flag on the Kremlin. In ten hours she had covered the twelve hundred miles which separate Astrakhan from the ancient capital of all the Russias.

From Moscow to St Petersburg the railway line measures only seven hundred and fifty miles. This was just half a day's journey, and the *Albatross*, as punctual as the mail, reached St Petersburg and the banks of the Neva at two in the morning. The clearness of the night, which at this high latitude is but little forsaken by the sun, allowed an instant's glance at this great capital.

Then came the Gulf of Finland, the Archipelago of Abo, the Baltic, Sweden at the latitude of Stockholm, and Norway at that of Christiania. Ten hours only for these twelve hundred miles! Indeed, it might be thought that no human power would henceforth be able to check the speed of the *Albatross*, as though the resultant of her force of projection and the terrestrial attraction would maintain her in an unvarying trajectory round the globe.

But she did stop nevertheless, just above the famous fall of the Rjukanfos in Norway. Gousta, whose summit dominates this wonderful region of Tellemarken, was like a gigantic barrier, which nothing could cross, towards the west. Thence the *Albatross* resumed her journey towards the south without moderating her speed.

And during this extraordinary flight what was Frycollin doing? Frycollin stayed silent in a corner of his cabin, sleeping as well as he could, except at meal times.

Tapage then favoured him with his company and jeered at his terror.

'Eh! eh! my boy! ' he said. 'So you aren't crying any more? Still, you needn't worry. . . . You got away with two hours' hanging! Well . . . at the speed we're making now, what a splendid air-bath you might have for your rheumatics! '

'It seems to me we're coming to pieces! '

'Perhaps so, good old Fry! But we shall go so fast we shan't have time to fall! . . . That's one comfort! '

'Do you think so? '

'Take a Gascon's word for it! '

To tell the truth, and not to exaggerate like Tapage, it was

a fact that, owing to that speed, the work of the lifting screws had been somewhat lessened. The *Albatross* glided on its bed of air like a Congreve rocket.

'And it'll last long like that?' asked Frycollin.

'Long? . . . Oh, no; only all our life!'

'Oh!' the Negro started wailing again.

'Take care, Fry, take care! For, as they say in my country, the master may give you another swing!'

And Frycollin gulped down his sobs along with the food he was cramming into his mouth.

Meanwhile, Uncle Prudent and Phil Evans, who were not men to waste time in fruitless recriminations, had made up their minds. Clearly flight was impossible. But if they could not set foot on the terrestrial globe, could they not make known to its inhabitants what had become of them since their disappearance, by whom they had been carried off, on what flying-machine they were detained? Might they not stimulate some audacious attempt by their friends to rescue them from the hands of Robur? How, Heaven knows!

Communicate? But how?

Would it be enough to copy sailors in distress when they enclose in a bottle a document giving the place of shipwreck and throw it into the sea?

But here the sea was the atmosphere. The bottle would not swim, and if it did not fall on somebody and crack his skull it would risk never being found.

But that was the only method they had, and they were about to sacrifice one of the bottles when Uncle Prudent had another idea. He took snuff, as we know, and this fault might be pardoned in an American, who might do worse. And as a snuff-taker he had a snuff-box—now empty. This box was made of aluminium. If it were thrown overboard any honest citizen that found it would pick it up; if he did, he would take it to the police station, and there they would find the document intended to make known what had become of the two victims of Robur the Conqueror.

And this is what they did. The note was short, but it told everything, and it gave the address of the Weldon Institute, with a request that it might be forwarded there. Then Uncle Prudent, after putting the note in it, bound up the box with a piece of thick woollen wrapping, as much to keep it from opening during the fall as from smashing on the ground. And then all that had to be done was to wait for a favourable opportunity.

The most difficult thing during this marvellous flight over Europe was to leave the cabin and creep along the deck, at the risk of being blown away, and to keep all this secret. It would not do for the snuff-box to fall into some sea or a gulf or lake or watercourse. Then it would be lost. But it was not impossible that the colleagues might in this way get into touch with the inhabited world.

It was then growing daylight. Better to wait for the night and take advantage of a slackening of speed or a halt to go out of their cabin. Then they might go on deck and drop the precious snuff-box over some town.

When all these points had been settled, the plan could not be put into execution—on that day, at all events. The *Albatross*, after leaving Gousta, had veered towards the south. She was exactly following the zero of longitude which at that time was no other, as recognized in Europe, than the meridian of Paris. This took her over the North Sea, to the very natural consternation of the thousands of coasting craft engaged in the English, Dutch, French, and Belgian trade. Unless the snuff-box fell on the very deck of one of those vessels there was every chance of its going to the bottom of the sea. So Uncle Prudent and Phil Evans had to wait for a better opportunity. And, as will be seen, an excellent chance was soon to be offered them.

At ten that evening the *Albatross* reached the French coast near Dunkirk. The night was rather dark. For a moment the lighthouse at Gris Nez could be seen crossing its electric beams with those of Dover on the other side of the Strait. Then the

Albatross flew over the French territory at an average height of three thousand feet.

Her speed had not been slackened. She shot like a rocket over the towns and villages so numerous in the rich provinces of northern France. On the meridian of Paris, after Dunkirk, came Doullons, Amiens, Creil, Saint Denis. She never deviated from a straight line; and about midnight she was over the 'city of light', which merits its name even when its inhabitants are in bed — or ought to be.

By what strange whim did the engineer decide to stop over the city? Nobody knows; certain it is that the *Albatross* came down till she was within a few hundred feet of the ground. Robur then came out of his cabin and the crew surged on deck to breathe the ambient air.

Uncle Prudent and Phil Evans took care not to miss such an excellent opportunity. After leaving their deck-house they walked away from the others so as to choose the most propitious moment. It was, above all, essential not to be seen.

The *Albatross*, like a gigantic beetle, glided gently over the mighty city. She took the line of the boulevards, then brilliantly lighted by the Edison lamps. Up to her there rose the rumble of the vehicles driving along the streets, and the roar of the trains on the many railways that radiate from Paris. Then she glided over the highest monuments as if she wanted to knock the ball off the Pantheon or the cross off the Invalides. She hovered over the two minarets of the Trocadero and the metal tower of the Champ de Mars, whose enormous reflector was flooding the whole capital with its electric rays.

This aerial promenade, this nocturnal loitering, lasted for about an hour. It was a halt for breath before recommencing the interminable voyage.

And doubtless Robur wished to give the Parisians the sight of a meteor quite unforeseen by their astronomers. The lights of the *Albatross* were switched on. Two brilliant sheaves of light moved along over the squares, the gardens, the palaces,

the sixty thousand houses of the city, sending their glare from one horizon to the other.

Assuredly the *Albatross* was seen this time—and not only clearly seen but heard also, for Tom Turner, putting his trumpet to his lips, sent a rousing fanfare across the city.

At this moment, Uncle Prudent, leaning over the rail, opened his hand and let the snuff-box fall.

Almost at once the *Albatross* shot upwards. Then through the heights of the Parisian sky rose the great cheers of the crowd densely gathered on the boulevards—a hurrah of stupefaction to greet the fantastic meteor.

Suddenly the lights of the aeronef went out and darkness and silence closed in around her as the voyage was resumed at the rate of one hundred and twenty miles an hour. That was all that was to be seen of the French capital.

At four in the morning the *Albatross* had traversed the whole country obliquely; and so as to lose no time in crossing the Alps or the Pyrenees, she flew over the surface of Provence to the Cape of Antibes. At nine next morning the San Pietrini assembled on the terrace of St Peter's at Rome were astonished to see her pass over the Eternal City. Two hours later she crossed the Bay of Naples and hovered for an instant in the midst of the coils of dust-laden smoke over Vesuvius. Then, after cutting obliquely across the Mediterranean, in the early hours of the afternoon she was sighted by the look-outs at La Goulette on the Tunisian coast.

After America, Asia! After Asia, Europe! More than eighteen thousand miles had this wonderful machine accomplished in less than twenty-three days!

And now there she was off over the known and unknown regions of Africa!

* * *

Perhaps someone might like to know what happened to the famous snuff-box after its fall.

It had fallen in the Rue de Rivoli, opposite No. 210, when

the street was deserted. In the morning it was picked up by an honest sweeper, who hurried off with it to the Prefecture of Police.

There, at first supposed to be an infernal machine, it was untied, examined, and opened with extreme care.

Suddenly a sort of explosion took place, a terrific sneeze, which the Chief de la Sûreté had not been able to keep back.

The document was then extracted from the snuff-box, and, to the general surprise it read as follows:

'Messrs Prudent and Phil Evans, President and Secretary of the Weldon Institute, Philadelphia, carried off in the aeronef *Albatross* by Robur, the engineer.

'Please inform our friends and acquaintances.

'U.P. and P.E.'

Thus was the inexplicable phenomenon at last explained to the people of the two worlds. Thus was peace restored to the scientists of the numerous observatories on the surface of the terrestrial globe.

CHAPTER XIII

In Which Robur the Engineer Acts as if He Wanted to Compete for One of the Montyon Prizes¹

AT THIS stage in the voyage of circumnavigation of the *Albatross*, it is certainly admissible to ask the following question.

Who was this Robur, of whom so far nothing has been said but the name? Did he pass his life in the air? Did his aeronef never rest? Had he not some retreat in some inaccessible spot in which, if he had no need of rest, he could at any rate revictual? It would be very strange if it were not so. The most powerful of the birds always have their eyrie or nest somewhere.

Moreover, what was the engineer going to do with his prisoners? Was he going to keep them in his power, to condemn them to a perpetual aviation? Or rather, after taking them on a trip over Africa, South America, Australasia, the Indian Ocean, the Atlantic, and the Pacific, to convince them against their will, did he mean to free them, saying: 'And now, gentlemen, I hope that you'll show yourselves less incredulous regarding "heavier than air"?''

To these questions it is as yet impossible to reply. They are the secrets of the future. Perhaps the answers will be revealed one day.

Anyhow it was not that nest which bird Robur was taking the trouble to look for on the northern frontier of Africa. He preferred to spend the rest of the day above the regency of Tunis from Cape Bon to Cape Carthage, sometimes hovering, and sometimes darting along as the whim took him. Soon he reached the interior, and flew down the beautiful valley of

¹ The Baron Montyon, a Parisian philanthropist, created a fund for giving annual prizes for acts of virtue.—I.O.E.

Medjerda, following the course of its yellow stream lost under its luxuriant bushes of cactus and oleander. Often, too, he scared away the hundreds of parrots which perched on the telegraph wires and seemed to be waiting for the passing messages, to bear them away beneath their wings.

When night came the *Albatross* was over the frontiers of Kroumiria, and if a Kroumir then existed he did not fail to fall with his face to the ground and to invoke Allah at the apparition of this gigantic eagle.

Next morning it was Bona and the lovely hills near by; then Philippeville, now a small Algiers, with its new wharves and arcades and its admirable vineyards, whose verdant shoots clothe the country-side, which seems to be a slice brought hither from Burgundy or the Bordelais.

This promenade of three hundred miles above the great and the little Kabylia was brought to an end about noon over the Kasbah at Algiers. What a view it was for the passengers on the aeronef! The open roadstead between Cape Matifou and Point Pescade, the shore dotted with palaces, marabouts, villas, irregular valleys clothed in their vineyard mantles, the Mediterranean, so blue, ploughed by the huge liners, which looked like steam launches! And so it was at Oran the picturesque, whose inhabitants, belated in the gardens of the citadel, could see the *Albatross* appear among the first stars of the night.

If Uncle Prudent and Phil Evans wondered what whim was making Robur, the engineer, parade their flying prison above Algerian territory—that continuation of France beyond a sea which deserves to be called a French lake—they had to infer that he was satisfied. Two hours after sunset the helm was put up and the *Albatross* bore off to the south-east; and, next day, after clearing the Tell Mountains, she saw the rising of the morning star over the sands of the Sahara.

This was the itinerary of July 8th: A glimpse of the little town of Géryville, founded like Laghouat on the edge of the desert to facilitate the future conquest of the Sahara. Next, not without difficulty, the col of Stillero, passed against a

somewhat boisterous wind. Crossing the desert, sometimes leisurely, over the ksars or green oases, sometimes at terrific speed that far outstripped the flight of the vultures. Often the crew had to fire into the flocks of these redoubtable birds which, a dozen or so at a time, fearlessly hurled themselves on to the aeronef, to the extreme terror of Frycollin.

But if the vultures could reply only with frightful cries and blows of beaks and talons, the natives, in no way less savage, were not sparing of their musket-shots, particularly after the crossing of the Mountain of Sel, whose green and violet slope bore its cape of white. Then at last over the broad Sahara, with the remains of the bivouacs of Abd el-Kadar. There the country is always dangerous to the European traveller, especially in the confederation of Beni-Mzal.

The *Albatross* then had to regain the upper air to escape the rush of a simoon which was sweeping a wave of ruddy sand along the surface of the sea. Then the desolate table-lands of Chetka scattered their ballast of blackish lavas up to the fresh and verdant valley of Ain-Massin. It is difficult to imagine the variety of the territories which could be seen at the one time. To the green hills covered with trees and shrubs succeeded long greyish undulations draped like the folds of an Arab burnous and broken into picturesque masses. In the distance could be seen the wadys with their torrential waters, their forests of palm trees, their groups of small houses grouped on a hill around a mosque, among them Metlili, where there vegetates a religious chief, the grand marabout Sidi Chick.

Before night several hundred miles had been covered above a flattish country furrowed with large sand-hills. If the *Albatross* had wished to halt, she would have come to earth in the depths of the Wargla oasis, hidden beneath an immense forest of palm-trees. The town showed itself clearly with its three distinct quarters, its ancient palace of the Sultan, a kind of fortified Kasbah, its houses of brick which the sun had undertaken to bake, and its artesian wells dug in the valley where the aeronef could have renewed her water supply. But,

thanks to her extraordinary speed, the waters of the Hydaspes, drawn in the vale of Cashmere, still filled her tanks in the midst of the African deserts.

Was the *Albatross* seen by the Arabs, the Mozabites, and the Negroes who share the oasis of Wargla? Certainly, for she was saluted with many hundred rifle shots, whose bullets fell back without being able to reach her. Then came the night, that silent night in the desert, whose secrets Félicien David has so poetically described.

During the following hours the course swerved back to the south-west, cutting across the routes of El Golea, one of which was discovered in 1859 by the intrepid French explorer Duveyrier.

The darkness was profound. Nothing could be seen of the Trans-Saharan Railway then being constructed on the plains of Duponchel—a long ribbon of iron which should connect Algiers and Timbuctoo by way of Laghouat and Gardaia, and should later reach the Gulf of Guinea.

Then the *Albatross* entered the region beyond the Tropic of Cancer. Six hundred miles from the northern frontier of the Sahara she crossed the route on which Major Laing met his death in 1846; she crossed the road of the caravans from Morocco to the Soudan, and on that part of the desert swept by the Tuaregs, she heard what is called 'the song of the sand', a soft plaintive murmur that seems to emerge from the ground.

Only one incident. A cloud of locusts rose into the air flying along, and fell on board in such a cargo as to threaten to 'sink' the aerial ship. But the deck was hurriedly cleared, except for a few hundreds kept by Tapage for his larder. And he served them up in so succulent a fashion that Frycollin for the moment forgot his perpetual fear and said—

'They're as good as prawns.'

They were then eleven hundred miles from the Wargla oasis and almost on the northern frontier of the immense kingdom of the Soudan. Then about two in the afternoon a

city appeared in the bend of a large river. That river was the Niger. That city was Timbuctoo.

If, up to then, this African Mecca had only been visited by the travellers of the Old World, Batouta, Khazan, Imbert, Mungo Park, Adams, Laing, Caillé, Barth, Lenz, on that day chance enabled two Americans to boast of having encountered it *de visu*, *de auditu* and even *de olfactu* on their return to America — if they ever did return.

De visu, because their view included the whole triangle, three or four square miles which forms the town; *de auditu*, because the day was an important market day and the noise was terrible; *de olfactu*, because the olfactory nerve could not but be very disagreeably affected by the odours of the Youbok-Kamo square, where the meat-market stands close to the palace of the ancient Somai kings.

The engineer had no intention of allowing the president and secretary of the Weldon Institute to remain ignorant that they had the extreme honour of contemplating the Queen of the Soudan, now in the power of the Turegs of Taganet.

'Gentleman, Timbuctoo!' he said, in the same tone as twelve days before he had said — 'Gentlemen, India!' Then he continued — 'Timbuctoo, 18° N. and 5°56' W. of Paris, about eight hundred feet above sea level. An important city of from twelve to thirteen thousand inhabitants, formerly illustrious in science and art. Perhaps you'd like to stay there for a few days?'

Such a proposal could only have been made ironically. 'But,' he continued, 'it would be dangerous for strangers among the Negroes, Berbers, Follanes and Arabs who occupy it — particularly as our arrival in an aeronef might annoy them.'

'Sir,' Phil Evans replied in the same tone, 'for the pleasure of leaving you we would willingly risk a nasty reception from the natives. Prison for prison, Timbuctoo rather than the *Albatross*.'

'That's a matter of taste,' answered the engineer. 'Anyhow, I shan't take the risk, for I am responsible for the safety of

the guests who do me the honour of travelling with me.'

'And so,' said Uncle Prudent, explosively, 'you are not content with being our gaoler? To injury you add insult!'

'Oh, irony, that's all!'

'Are there any weapons on board?'

'Yes, Quite an arsenal.'

'Two revolvers will do, if I hold one, sir, and you hold the other.'

'A duel!' exclaimed Robur, 'a duel, which might lead to the death of one of us!'

'Which would certainly lead to it!'

'Well! No, Mr President of the Weldon Institute, I very much prefer keeping you alive!'

'To be sure of keeping alive yourself. That's wise.'

'Wise or not, it suits me. You are at liberty to think as you like, and to complain to those who have the power to help you — if you can.'

'And that's been done, Mr. Robur.'

'Really!'

'Was it so difficult, when we were crossing the inhabited part of Europe, to drop a letter overboard?'

'You did that?' said Robur, in a paroxysm of rage.

'And what if we have?'

'If you have — you deserve —'

'What then, Mr Engineer?'

'To follow your letter overboard.'

'Throw us over, then,' Uncle Prudent exclaimed. 'We did do it.'

Robur advanced towards them. At a gesture from him Tom Turner and some of the crew ran up. Yes! the engineer was tempted to put his threat into execution, and, fearful perhaps of yielding to it, he precipitately rushed into his cabin.

'Good!' exclaimed Phil Evans.

'And what he dare not do,' Uncle Prudent replied. 'I'll dare to do it! Yes, I'll do it!'

At that moment the population of Timbuctoo were crowd-

ing into the squares and roads and the terraces built like amphitheatres. In the rich quarters of Sankore and Sarahama, as in the miserable cone-shaped huts at Raguidi, the priests were launching from the tops of the minarets their loudest maledictions against the aerial monster. These were more harmless than the rifle-bullets; though assuredly if the aeronef had come to earth she would have been torn to pieces.

For some miles noisy flocks of storks, francolins, and ibises escorted the *Albatross* and tried to match their speed against hers, but her rapid flight soon out-distanced them.

Evening came, the air was troubled by the roarings of the numerous herds of elephants and buffaloes which wander over this land, whose fertility is indeed marvellous. For forty-eight hours the whole of the region between the zero meridian and the second degree from it, in the Niger Bend, unrolled itself under the *Albatross*.

If a geographer had such an apparatus at his command, with what facility could he map the topography of the country, estimate the heights, fix the courses of the rivers and their tributaries, and determine the positions of the towns and villages! Then none of these huge blanks on the map of Africa, none of these dotted lines, none of these vague designations which are the despair of the map-makers!

On the morning of the 11th the *Albatross* crossed the mountains of northern Guinea, between the Soudan and the gulf which bears their name. On the horizon was the confused outline of the Kong mountains in the kingdom of Dahomey.

Since leaving Timbuctoo, Uncle Prudent and Phil Evans had noticed that the course had always been from north to south. If that direction was persisted in they would cross the equator in six more degrees. Would the *Albatross* then abandon the continents and fly not over a Behring Sea, a Caspian Sea, a North Sea, or a Mediterranean, but over the Atlantic Ocean?

This prospect was not very soothing to the two friends, whose chances of escape had sunk to zero.

But the *Albatross* was slowing down as though she hesitated to leave African soil. Was Robur thinking of going back? No; but his attention had been particularly drawn to the country which he was then crossing.

It is well-known—and he knew it—that the kingdom of Dahomey is one of the most powerful on the West Coast of Africa. Strong enough to hold its own with its neighbour, the kingdom of Ashantee, its area is somewhat small, three hundred and sixty miles from north to south, and one hundred and eighty from east to west. But its population numbers some eight hundred thousand inhabitants, to which are to be added those of the neighbouring independent territories of Whydah and Ardrah.

If not large, this kingdom of Dahomey is often talked about. It is celebrated for the frightful cruelties which mark its annual festivals, and its human sacrifices—fearful hecatombs intended to honour the sovereign it has lost and the sovereign who succeeds him. It is even thought polite, when the King of Dahomey receives a visit from some high personage or some foreign ambassador, to give him a surprise present of a dozen heads, cut off in his honour by the minister of justice, the ‘minghan’, who is wonderfully skilful as an executioner.

As the *Albatross* came flying over Dahomey, the King Bâhadou had just died, and the whole population was proceeding to the enthronization of his successor. Hence there was great agitation all over the country, and it did not escape Robur’s notice.

Long lines of Dahomians from the country were making for the capital, Abomey. Well-kept roads radiating among vast plains clothed with giant plants, immense fields of manioc, forests of palms, cocoa-trees, mimosas, orange-trees, mango-trees—such was the country whose perfumes rose to the *Albatross*, while thousands of parrots and cardinal birds swarmed among the trees.

The engineer, leaning over the rail, deep in thought, exchanged only a few words with Tom Turner.

It did not look as though the *Albatross* had attracted the attention of those moving masses, often invisible under the impenetrable roof of trees. This was doubtless due to her keeping at a good altitude in a bank of light cloud.

About eleven in the morning the capital appeared within its walls, defended by a ditch measuring twelve miles round, with wide, regular streets on a flat plain, and a large square whose northern side was occupied by the king's palace. This huge collection of buildings is commanded by a terrace not far from the place of sacrifice. During the festival days it is from this high terrace that they throw the prisoners, tied up in wicker baskets, and it can be imagined with what fury these unhappy wretches are hacked to pieces.

In one of the courtyards which divide the king's palace there were drawn up four thousand female warriors, one of the contingents of the royal army—and not the least courageous.

If it is doubtful if there are any Amazons on the river of that name, there is no doubt at all at Dahomey. Some have a blue shirt with a blue and red scarf, with white-and-blue striped trousers and a white cap, a cartridge belt round the waist; others, the elephant-huntresses, are armed with a heavy carbine, a short-bladed dagger, and two antelope horns fixed to their heads by a band of iron. The artillery-women have a blue-and-red tunic, and, as weapons, blunderbusses and old cast-iron cannons; then a battalion of young girls in blue tunics and white trousers, consisting of genuine virgins as pure as Diana, and like her, armed with bows and arrows. To add to these Amazons five or six thousand men in loin-cloths and cotton shirts is to pass in review the Dahomian army.

Abomey, that day, was completely deserted. The sovereign, the royal household, the male and female army, and the population had all gone out of the capital to invade a vast plain a few miles away surrounded by magnificent forests.

It was on this plain that the recognition of the new king was to take place. Here it was that thousands of prisoners,

taken during recent razzias, were to be immolated in his honour.

It was about two o'clock when the *Albatross*, arrived over the plain, began to descend among the clouds which still hid her from the eyes of the Dahomians.

There were sixteen thousand people at least, come from all parts of the kingdom, from Whydah, and Kerapay, and Ardrah, and Tombory, and the most distant villages.

The new king—a sturdy fellow named Bou-Nadi—some five-and-twenty years old, was seated on a hillock shaded by a group of wide-branched trees. Before him stood his male army, his Amazons, and his whole people.

At the foot of the mound fifty musicians were playing on their barbarous instruments, elephants' tusks giving forth a raucous note, deerskin drums, calabashes, guitars, bells struck with an iron clapper, and bamboo flutes, whose shrill whistle dominated everything. Every second came discharges of guns and blunderbusses, discharges of cannons with the carriages jumping so as to risk crushing the artillery-women, and a general uproar so intense that it would have drowned even the thunder.

In one corner of the plain, under a guard of soldiers, were grouped the prisoners selected to accompany the defunct king into the other world, for death was not to make him lose his royal privileges. At the obsequies of Ghozo, the father of Bahadou, his son had despatched three thousand after him, and Bou-Nadi could not do less than his predecessor. Would it not take a large number of messengers to assemble not only the Spirits but the whole heavenly host invited to attend the funeral of the deified monarch? For an hour there was a series of discourses, harangues, palavers and dances, executed not only by professionals, but by the Amazons, who displayed much bellicose grace.

But the time for the hecatomb was approaching. Robur, who knew the bloody customs of Dahomey, did not lose sight of the men, women and children reserved for butchery.

The minghan was standing at the foot of the hillock. He was brandishing his executioner's sword, with its curved blade surmounted by a metal bird, whose weight rendered the blow more certain.

This time he was not alone. He could not have performed the task. Near him were grouped a hundred executioners, all accustomed to cut off heads at a single blow.

The *Albatross* came towards them in an oblique direction, moderating the speed of her suspensory and propulsive screws. Soon she emerged from the bed of clouds which hid her till she was less than three hundred feet from the ground, and for the first time she was visible from below.

Contrary to what had usually happened, the savages saw in her a celestial being come expressly to render homage to King Bahadou. Then an indescribable enthusiasm, interminable shouts, general prayers addressed to this supernatural hippogriff, which had doubtless come to take the body of the dead king to the heights of the Dahomian heaven.

And now the first head fell under the minghan's sword. Then other prisoners were led up in hundreds before the horrible executioners.

Suddenly a gun was fired from the *Albatross*. The minister of justice fell dead with his face to the ground.

'Good shot, Tom!' said Robur.

'Bah—into the brown!' replied the mate.

His comrades, armed like himself, stood ready to fire when the order was given.

But a change had come over the crowd below. They had understood. The winged monster was not a friendly Spirit, it was a Spirit hostile to the good folk of Dahomey. So, after the fall of the minghan, loud shouts for revenge arose on all sides. Almost immediately a fusillade broke out over the plain.

These menaces did not prevent the *Albatross* from descending boldly to within a hundred and fifty feet of the ground. Uncle Prudent and Phil Evans, whatever their feelings towards Robur, could not help joining him in such a work of humanity.

'Yes! Rescue the prisoners!' they shouted.

'That's what I mean to do!' said the engineer.

And the magazine-rifles of the *Albatross*, in the hands of the crew, began a discharge of musketry of which not a bullet was lost in the midst of that human swarm. And the gun, turned obliquely downwards, shot forth its shrapnel, which worked wonders.

The prisoners, although they did not understand how the help had come to them, broke their bonds, while the soldiers returned the aeronef's fire. The stern screw was shot through by a bullet, and a few other shots reached the hull. Frycollin, crouching in his cabin, just escaped being hit through the wall of the deck-house.

'Ah! They want to try it on, then!' exclaimed Tom Turner. And, rushing to the magazine, he returned with a dozen dynamite cartridges, which he distributed to his comrades. At a sign from Robur these cartridges were hurled at the hillock, and as they reached the ground they exploded like so many small-calibre shells.

What a rout as king, court, army and people were stricken with fear, only too well justified by such an intervention! They sought refuge under the trees, while the prisoners ran off without anybody's thinking of pursuing them.

In this way was the festival in honour of the new king of Dahomey interrupted. And in this way Uncle Prudent and Phil Evans had to recognize what was the power of the aeronef and what services it could render to humanity.

Soon the *Albatross* rose quietly to a moderate height; passing over Whydah, she lost to view this savage coast which the south-west wind hems round with an inaccessible surf.

She flew out over the Atlantic.

CHAPTER XIV

In Which Uncle Prudent and Phil Evans Cross a Whole Ocean Without Being Seasick

YES, THE Atlantic! The fears of the two colleagues were realized; but it did not seem as though Robur had the least anxiety about venturing over this vast ocean. This did not worry either him or his men, who seemed to be used to such voyages. Already they had quietly gone back to their stations. No nightmares would break their sleep.

Where was the *Albatross* going? As Robur said, was she to do more than go round the world? Even if she were, the voyage must end somewhere. That Robur should spend his life in the air on board the aeronef and never come to ground, that was not admissible. How could he renew his stock of provisions and munitions, not to speak of the materials required for working his engines? He must have some retreat, some home-port in some unknown and inaccessible spot where the *Albatross* could revictual. That he had broken off all connection with the inhabitants of the land, agreed! But with every point on the terrestrial surface—No!

That being the case, where was this point? How had the engineer come to choose it? Was he expected by a little colony of whom he was chief? Could he recruit a new personnel there? And, first of all, why should men of such diverse origin have followed his fortunes?

What resources were at his disposal to have been able to build so costly a vessel whose construction had been kept so secret? It is true his living was not expensive. Aboard they shared a communal life, a family, happy and not trying to hide it. But, above all, who was this Robur? Where did he come from? What had been his past? So many riddles impos-

ible to solve; and he whom they concerned would doubtless never consent to speak.

It is not to be wondered at that this situation, so full of insoluble problems, drove the colleagues almost to frenzy. To find themselves carried off into the unknown without knowing what the end of such an adventure might be, doubting even if it would end, sentenced to perpetual aviation, was this not enough to drive the president and secretary of the Weldon Institute to terrible extremities?

Meanwhile, since that afternoon of July 11th, the *Albatross* drove along above the Atlantic. Next morning when the sun rose there was nothing to be seen but the circular line where earth is confounded with sky. No land in sight, and so vast was the field of vision that Africa had vanished beneath the northern horizon.

When Frycollin ventured out of his cabin, when he saw all this water beneath him, fear reclaimed him at once.

Beneath him is hardly the correct phrase; better have said around him, for to an observer at an elevated zone above the earth the abyss seems to surround him everywhere and the horizon, raised to his own level, seems to travel away as he moves towards it.

Undoubtedly Frycollin could not explain this effect physically, but he felt it in his heart. This was enough to give that 'horror of the abyss' from which certain people, brave though they may be, cannot free themselves. Anyhow the Negro was prudent enough to give vent to no recriminations. His eyes shut, he groped his way back to his cabin, with the prospect of staying there for some time.

Of the hundred and forty-five million square miles represented by the surface of the sea, the Atlantic claims about a quarter; and it did not seem that the engineer was in a hurry to cross it. So he had given no orders for full speed. Anyhow, the aeronef could not regain the velocity which had carried her across Europe at 120 miles per hour. Here, where the southwest winds prevail, the wind was against them, and though it

was not very strong, it would not do to defy it. So the *Albatross* did not care to match the adverse winds with the strength of her propellers. She contented herself with a moderate speed which, however, outstripped that of the fastest Transatlantic liners.

On July 13th, she crossed the Line and this was duly announced to the crew. It was thus that Uncle Prudent and Phil Evans learned that they were leaving the northern for the southern hemisphere.

The crossing of the Line took place without any of the trials and ceremonies that still linger on certain ships. Tapage contented himself with pouring a pint of water down Frycollin's neck, but as this baptism was followed by several glasses of gin, the Negro declared himself ready to cross the Line as often as they liked, so long as this were not on the back of a mechanized bird in which he had no confidence.

On the morning of the 15th the *Albatross* passed between the islands of Ascension and St Helena, somewhat nearer to the last, whose high ground showed above the horizon for some hours. To be sure, if in the period when Napoleon was in the power of the English, there had existed an apparatus like Robur's, then Hudson Lowe, in spite of his insolent precautions, would have seen his illustrious prisoner make his escape by air!

During the evenings of July 16th and 17th there was a curious phenomenon at sunset. In a higher latitude it might have been taken for the aurora borealis. The sun as it set shot forth a number of multi-coloured rays, some of which were a vivid green.

Was this a cloud of cosmic dust through which the earth was then passing, and which reflected the last beams of the day? Some observers have assigned such an origin to these crepuscular lights, but their explanation could not have been maintained for long had they been on board the aeronef.

Investigation showed that floating in the air were tiny crystals of pyroxene, and glassy globules and tiny particles of

magnetic iron, analogous to the matter ejected by certain volcanoes. Hence, no doubt that a volcanic eruption had projected this cloud into the air and that its corpuscles had produced this phenomenon—a cloud which the aerial currents held in suspension while it drifted over the Atlantic.

What is more, during this part of the journey other phenomena were observed. On several occasions some of the clouds gave the sky a strange greyish tint, and when the curtain of vapour was passed its surface seemed ridged with dazzling white spirals, and dotted with solid spangles, giving an appearance which could only be explained as due to a form of hail.

In the night between the 17th and 18th there appeared a yellow-greenish lunar rainbow, due to the aeronef's being between the full moon and a curtain of fine rain which vaporized before it reached the sea.

Did these varied phenomena portend a change in the weather? Perhaps. Anyhow, the wind, which had blown from the south-west since their leaving the coast of Africa, had now dropped to a calm near the Equator. And in this tropical zone it was extremely hot, so Robur had risen to seek the coolness of the higher air. Here he had to screen himself from the direct rays of the sun, which would have been insupportable.

This change in the air-currents certainly gave warning that different climatic conditions would be found beyond the Equator. In the southern hemisphere the month of July corresponds to the month of January in the northern—it is the depth of winter. If the *Albatross* were kept on her southerly course she would soon feel the effect of this. And, as the sailors say, the sea already 'felt it'.

On July 18th, beyond the Tropic of Capricorn, another phenomenon showed itself. This would have been alarming to a surface vessel.

A strange succession of luminous waves crossed the surface of the ocean with a speed not to be estimated at less than sixty miles an hour: they sped along at intervals of about eighty feet, tracing long furrows of light. As night fell an intense

reflection rose as far as the *Albatross*, so that she might have been taken for a flaming aerolite. Never before had Robur sailed on a sea of fire — a fire without heat from which he had no need to flee by soaring upwards into the sky.

Electricity must have been the cause of this light, for it could not be attributed to a bank of fish-spawn, or to a host of those animalculæ whose number produces phosphorescence. This showed that the electric tension of the atmosphere was considerable.

Next day, July 19th, an ordinary ship would probably have been lost. But the *Albatross* played with the winds and waves like the powerful bird whose name she bore. If she did not enjoy resting on their surface like the petrels, she could, like the eagles, find calm and sunshine in the higher zones.

They had now passed the forty-seventh parallel. The day lasted only seven or eight hours, and it would become less the nearer they approached the Pole.

About one in the afternoon the *Albatross* had sunk to look for a more favourable current and was flying over the sea at less than a hundred feet from its surface.

The weather was calm. In certain parts of the sky were thick black clouds, rising in mounds on their upper surface, and ending below in a sharp horizontal line. From these clouds descended a few elongated projections whose points seemed to draw up mounds of foaming water to meet them.

Suddenly the water shot up in the form of a gigantic hour-glass.

In an instant the *Albatross* was enveloped in the whirl of an enormous waterspout, while twenty others, as black as ink, raged around her.

Fortunately, the gyratory movement of the water was opposite to that of half of the lifting suspensory screws, which would otherwise have had no action, so that the aeronef would have been hurled into the sea. But she began to spin round with frightful speed.

The danger was immense, and perhaps impossible to escape,

for the enginger could not get out of the spout, whose suction held him back in defiance of his propellers. The men, thrown to the ends of the deck by centrifugal force, had to hold on to the rail to avoid being hurled off.

‘Keep cool!’ shouted Robur.

‘They had to, and to keep their patience too.’

Uncle Prudent and Phil Evans, who had just come out of their cabin, were hurled back at the risk of flying overboard.

As she spun the *Albatross* was carried along by her spout, which rotated along the waves with a speed enough to make her screws jealous. And if she escaped from one spout she would be caught by another, and risk being torn asunder.

‘Fire the gun!’ Robur shouted.

This order was given to Tom Turner, who was crouching behind the cannon amidships, where the effect of the centrifugal force was least felt. He understood Robur’s idea. In a moment he had opened the breech and slipped in a cartridge from the ammunition-box fastened near by.

The shot was fired and at once the waterspouts collapsed, and with them vanished the cloud ceiling they seemed to bear above them. The shock given to the air had been enough to disperse the spouts, and the enormous cloud, now transformed into rain, streaked the horizon like an immense liquid net stretched from sea to sky.

Free at last, the *Albatross* hurriedly rose a few hundred yards.

‘No damage on board?’ asked Robur.

‘No,’ replied Tom Turner. ‘But we don’t want to play at spinning-tops like that any more!’

For ten minutes or so the *Albatross* had almost been lost. But for her extraordinary strength of build she would have perished.

During this crossing of the Atlantic many were the hours whose monotony was unbroken by any phenomenon whatever. The days grew ever shorter and the cold grew keen. Uncle Prudent and Phil Evans saw little of Robur. Shut in his cabin,

the engineer was busy laying out his course and marking it on his maps, taking his bearings whenever he could, recording the readings of his barometers, thermometers, and chronometers, and entering up in his log-book all the incidents of the voyage.

The colleagues wrapped themselves up well and eagerly watched for the sight of land to the southward. At Uncle Prudent's request Frycollin tried to pump the cook as to whither the engineer was bound. But what reliance could be placed on the information given by this Gascon of a François Tapage? Sometimes Robur was a former minister of the Argentine Republic, a Lord of the Admiralty, an ex-President of the United States, a Spanish general temporarily retired, a Viceroy of India, who had sought a more elevated position in the air. Sometimes he possessed millions, thanks to successful razzias in the aeronef, and he had been denounced for piracy. Sometimes he had been ruined by making the aeronef, and had been forced to fly aloft to escape from his creditors. As to knowing if he were going to stop anywhere, no! But if he thought of going to the moon, and found somewhere there to suit him, there he would stay.

'Eh! Fry, my boy! You'd like to see what's going on up there?'

'I shan't go! . . . I refuse!' said the idiot, who took all these absurdities seriously.

'And why, Fry, why? You might get married to some lovely young Lunarian!'

Frycollin reported this conversation to his master, who saw that he would get no information about Robur. And so he thought only of being revenged on him.

'Phil,' said he one day, 'it's quite certain that escape is impossible.'

'Impossible.'

'Right! But a man always belongs to himself; and if he has to, by sacrificing his life—'

'If we are to make that sacrifice let it be soon,' replied Phil

Evans, whose temperament, cool as it was, could bear no more. 'It's time to end this. . . . Where's the *Albatross* going? Here we are flying obliquely over the Atlantic, and if we keep on we shall get to the coast of Patagonia, then Tierra del Fuego. . . . And then? . . . Go across the Pacific or venture to the continent around the South Pole? . . . Anything is possible with this Robur! . . . We'll end up by being lost. So it's a case of legitimate self-defence, and if we must perish —'

'Which' we shan't do,' answered Uncle Prudent, 'without being avenged, without annihilating this apparatus and everybody she carries.'

The colleagues had reached a stage of impotent fury and stifled rage. If they had to, yes, they were prepared to sacrifice themselves to destroy the inventor and his secret.

A few months and that would be the end of the life of this prodigious aeronef, of whose superiority in aerial locomotion they had such convincing proofs! The idea took such a hold of them that they thought of nothing else but how to put it into execution. But how? By seizing some of the explosives on board and simply blowing her up. But first they had to get into the magazine!

Fortunately for them, Frycollin had no suspicion of their scheme. At the thought of the *Albatross* exploding in mid-air he would not have shrunk from betraying his master.

It was on July 23rd that the land reappeared in the southwest near Cape Virgines, at the entrance of the Straits of Magellan. Beyond the fifty-second parallel, at this time of year, the night was eighteen hours long and the temperature fell a few degrees below freezing.

At first the *Albatross*, instead of plunging deeper into the south, followed the windings of the Strait as if to enter the Pacific. After passing Lomas Bay, leaving Mount Gregory to the north and the Brecknocks to the west, they sighted Punta Arenas, a small Chilian village, at the moment when the church bells were in full peal; and a few hours later they were over the old settlement at Port Famine.

But during these short hours of the southern day, what a spectacle! Rugged mountains, peaks eternally capped with snow, with thick forests rising on their flanks, inland seas, bays amidst the peninsulas and islands of the Archipelago. Clarence Land, Dawson Land, and Desolation Land, straits and channels, countless capes and promontories, all in inextricable confusion, and bound by the ice in one solid mass from Cape Forward, the termination of the American Continent, to Cape Horn, where the New World ends.

However, once arrived at Port Famine, it was obvious that the *Albatross* was resuming her course towards the south. Passing between Mount Tarn on the Brunswick Peninsula and Mount Graves, she steered direct for Mount Sarmiento, an enormous ice-capped peak, which dominates the Straits of Magellan, over 6,000 feet above sea-level.

This was the land of the Fishing Tribes, or Fuegians, the natives who inhabit Tierra del Fuego, the land of fire.

Six months earlier, in the height of summer, with days from fifteen to sixteen hours long, how beautiful and fertile would most of this country be, particularly in its southern portion!

Then, all around, valleys and pasturages that could support thousands of animals; virgin forests of gigantic trees — birches, beeches, ash-trees, cypresses, tree-ferns — and broad plains overrun by herds of guanacos, vicunas, and ostriches.

Now armies of penguins and myriads of birds; so when the *Albatross* switched on her electric lights, the guillemots, ducks, and geese hurled themselves on board enough to fill Tapage's larder a hundred times.

Here was plenty of work for the cook, who knew how to prepare this food and to take away its oily taste. And here, too, was plenty of work for Frycollin, who did not refuse to pluck dozens upon dozens of these interesting birds.

That day, as the sun was setting about three in the afternoon, there appeared a large lake framed in a border of superb forest. The lake was then completely frozen, and a few

natives with long snowshoes on their feet were swiftly gliding over its surface.

At the sight of the *Albatross*, the Fuegians, at the height of terror, fled in all directions, and when they could not get away they hid themselves, burrowing into the ground like animals.

The *Albatross* never swerved from her southerly course beyond the Beagle Channel and on past Navarin Island, whose Greek name is rather surprising among the barbarous place-names of these distant lands; and on beyond Wollaston Island, bathed by the last of the Pacific waters. At last, having travelled nearly four thousand five hundred miles from the Dahomey coast, she passed the farthest islands of the Megallanic Archipelago and then the farthest of all towards the south, its point gnawed by the never-resting surf, the terrible Cape Horn.

CHAPTER XV

In Which the Albatross Does What Perhaps Could Never Have Been Done

NEXT DAY was July 24th; and July 24th in the southern hemisphere corresponds to January 24th in the northern. 'The fifty-sixty degree of latitude had been left behind, and that corresponds to the parallel in northern Europe which runs through Edinburgh.

The thermometer kept steadily just below freezing. The machinery had to be called upon to furnish a little artificial heat to the apparatus for warming the cabins. It also goes without saying although the days begin to lengthen after June 21st in the southern hemisphere, yet that increase was much more than overcome by the flight of the *Albatross* towards the polar regions, and the daylight consequently became very short.

Hence little was to be seen, and at night the cold became very keen; to resist it they had to dress in Eskimo or Fuegian style. But as there was no scarcity of clothing on board, the colleagues, well wrapped up, could stay on deck thinking only of their plans of escape, and watching for an opportunity to carry them out. They saw little of Robur; since the threats exchanged in the Timbuctoo country, the engineer no longer spoke to them.

Frycollin seldom came out of the cook-house, where Tapage treated him most hospitably—on condition that he became assistant cook. This was not without its advantages, and the Negro, with his master's permission, very willingly accepted it. Shut up in the galley, he saw nothing of what was happening outside, and might consider himself out of reach of danger. Wasn't he very like the ostrich, not only physically in his stomach, but morally in his stupidity?

Now what point of the globe was the *Albatross* making for? In mid-winter could she possibly be braving the southern seas or the Polar continents? In this icy atmosphere, even granting that the chemicals of the batteries could resist freezing, did it not mean death for all the crew? That Robur should attempt to cross the Pole in the warm season might pass, but in the endless night of the Antarctic this would be the act of a madman.

Thus reasoned the president and the secretary of the Weldon Institute, now dragged to the far end of this continent of the New World, which is still America, though not that of the United States.

What was this intractable Robur going to do? Wasn't it time for them to end this voyage by destroying the ship?

One thing was certain, that during July 24th the engineer had frequent consultations with his mate. He and Tom Turner again and again consulted the barometer—not this time to work out the height they had reached but to keep an eye on the weather. Some signs that they had to reckon with had no doubt appeared.

Uncle Prudent also noticed that Robur was taking stock of the stores, as much for the welfare of the aeronef's lifting and propulsive machinery as for that of the human machinery, which just as much needed seeing to. Everything seemed to show that he was contemplating turning back.

'Turning back!' said Phil Evans. 'But where to?'

'Where this Robur can re-provision the ship,' Uncle Prudent replied.

'That ought to be in some lost island in the Pacific with a colony of scoundrels worthy of their chief.'

'That's what I think, Phil Evans. I fancy he's going west, and with the speed he can get up it won't take him long to get there.'

'But we shouldn't be able to put our plan into execution. If he gets there—'

'He shan't get there, Phil Evans!

The colleagues had partly guessed the engineer's intentions. During the day it was no longer doubtful that the *Albatross*, after reaching the confines of the Antarctic Ocean, would certainly retreat. When the ice has formed about Cape Horn, all the lower regions of the Pacific are covered with ice-fields and icebergs. The ice-bank then forms an impenetrable barrier to the strongest ships and the boldest navigators.

By increasing the speed of her wings the *Albatross*, of course, could clear the ice mountain accumulated on the ocean, then the mountains of earth towering over the polar continent — if it is a continent that forms the southern ice-cap. But to brave, in the middle of the polar night, an atmosphere which could fall to sixty below zero, would he be rash enough? No, so after going about eighty miles to the south the aeronef headed westerly, as if for some unknown island of the Pacific groups.

Beneath her stretched the liquid plain between Asia and America. The waters now had assumed that singular colour which has earned for them the name of the 'Milky Sea'. In the half-shadow, which the enfeebled rays of the sun were unable to dissipate, the whole surface of the Pacific was a milky white. It seemed like a vast snowfield, whose undulations were imperceptible seen from such a height. If that part of the sea had been solidified by the cold, and converted into an immense icefield, its aspect could not have been different.

It is now known that myriads of luminous particles of phosphorescent bodies produce this phenomenon. What was surprising was to come across this opalescent mass elsewhere than in the Indian Ocean.

Suddenly the barometer fell, after keeping somewhat high during the earlier hours of the day. The indications were plainly such as a shipmaster ought to take seriously, though the aeronef might despise them. Anyhow, it was to be supposed that some terrible storm had recently troubled the Pacific waters.

It was one in the afternoon when Tom Turner, coming up to the engineer, said, 'Mr Robur, look at that black spot

on the horizon — there — due north of us? That can't be a rock?'

'No, Tom; there's no land out in that direction.'

'Then it must be a ship — or a boat, at any rate.'

Uncle Prudent and Phil Evans, who were in the bow, looked in the direction the mate pointed out.

Robur asked for his marine telescope and began to scrutinize the object.

'It's a boat,' said he, 'and I'll say that it's got some men on board.'

'Shipwrecked?' asked Tom.

'Yes! Shipwrecked. They've had to abandon their vessel. Poor fellows, not knowing at all where the land is and perhaps dying of hunger and thirst! Well, it shan't be said that the *Albatross* didn't try to come and help them!'

Orders were given to the engineer. The aeronef began to descend slowly. At three hundred yards she stopped, and her propellers drove her full speed towards the north.

Yes, it was certainly a boat. Her sail flapped against the mast. There was no wind, and she was making no progress. Doubtless nobody on board had strength enough left to use the oars.

In the boat were five men asleep or too weary to move — unless they were dead.

The *Albatross* came above them and slowly descended.

On the boat's stern could be read the name of the ship to which she belonged — the *Jeanette* of Nantes, a French vessel whose crew had had to abandon ship.

'Hallo, there!' shouted Tom Turner.

And he ought to have made himself heard, for the boat was not eighty feet below him.

No answer.

'Fire a gun!' said Robur.

The order was obeyed, and the report echoed over the sea.

One of the shipwrecked men was seen to look up feebly. His eyes were haggard and his face was that of a skeleton. As

he caught sight of the *Albatross* he made the gesture of a frightened man.

'Don't be afraid,' said Robur in French. 'We've come to help you. Who are you?'

'Sailors from the barque *Jeanette*, a three-master, and I'm the mate. . . . It was a fortnight ago we left her just as she was going to sink. . . . We've run out of water and food.'

The four other men had slowly raised themselves up. Wan and exhausted, in a terrible state of emaciation, they lifted their hands towards the *Albatross*.

'Look out!' shouted Robur.

A line was let down, and a pail of fresh water was lowered into the boat.

The men snatched at it and drank it with an eagerness painful to see.

'Food, food!' they exclaimed.

A basket with some provisions, a flask of brandy, and several pints of coffee descended towards them. The mate found it difficult to restrain them as they assuaged their hunger.

Then, 'Where are we?'

'Fifty miles from the coast of Chili and the Chonos Archipelago,' answered Robur.

'Thanks. But there's no wind, and —

'We're going to give you a tow.'

'Who are you?'

'People who are glad to be able to help you,' was all that Robur told them.

The mate understood that here was an incognito which had to be respected. But this flying-machine, could it possibly have enough power to tow them through the water?

Yes; and the boat, attached by a hundred feet of rope, was hauled eastwards by her power. At ten in the evening, the land was sighted, or rather they could see the lights which indicated its position. It had come just in time, this rescue from Heaven, for the survivors of the *Jeanette*, and they had every right to believe that their salvation was miraculous.

When they had been taken to the mouth of the channel through the Chonos Islands, Robur shouted to them to cast off the tow line—which they did while blessing those who had saved them—and the *Albatross* made for the open sea.

Certainly there was some good in this aeronef, which could thus help sailors lost at sea! What balloon, however perfect it might be, would have been able to render such a service? And between themselves Uncle Prudent and Phil Evans could not but admit it, although they were in a state of mind to deny even this evidence.

Still a rough sea. Alarming signs. The barometer fell several millimetres. There were terrible blasts of wind, which screamed noisily in the helicoperal machinery and then for a moment or so failed altogether. Under such circumstances a sailing vessel would have had two reefs in her topsails and one in her fore-sail. Everything showed that the wind was rising in the north-west. The storm-glass was moving disquietingly.

At one in the morning the wind settled with extreme violence. Although the aeronef was going right in its teeth she was still making progress at a rate of twelve to fifteen miles an hour. But she could not be expected to do more.

A cyclone was obviously brewing—something very rare in these latitudes. Whether it be called a hurricane, as in the Atlantic, a typhoon, as in Chinese waters, a simoon, as in the Sahara, or a tornado, as on the western coast, such a storm is always gyratory—and dangerous. Yes, dangerous indeed for any ship caught in the whirl which increases from the circumference to the centre, and has only one spot of calm, the middle of this Maelström of the air.

Robur knew this. He also knew it was wise to escape from the cyclone, getting out of its zone of attraction by rising to the upper air. So far he had always succeeded. But now he had not an hour, perhaps not a minute, to lose!

The violence of the wind increased perceptibly. Stripped of their crests, the waves sent a white dust scurrying over the sur-

face of the sea. It was clear, too, that the cyclone was rushing straight towards the polar regions with frightful speed.

'Higher!' Robur gave the order.

'Higher it is,' Tom Turner replied.

The highest possible lifting power was given to the aeronef, and she rose slantingly as though travelling on a plane sloping downwards to the south-west. Then the barometer fell further still — a sudden fall of the mercury of several inches — and the *Albatross* paused in her ascent.

What was the cause of the stoppage? It was plainly due to air pressure, to some formidable downwards current which had diminished the resistance of the air.

When a steamer travels up-stream her screw is less effective because the water tends to flow between its blades. The reaction is then marked, and it may even be as great as the current. So with the *Albatross* at this moment.

But Robur would not throw in his hand. His seventy-four screws, working in perfect unison, were driven at a maximum speed. But, irresistibly swept along by the cyclone, the aeronef could not get out of it. During the few lulls she again began to ascend. But the heavy air-pressure soon drew her back, and she sank like a foundering ship. And was it not sinking in this aerial sea, and in a night whose darkness the headlights of the aeronef could break only for a short distance?

If the violence of the cyclone increased the *Albatross* would be nothing but a wisp of straw swept away by one of those whirlwinds that root up the trees, carry off the roofs, and blow down the walls.

Robur and Tom could speak only by signs. Uncle Prudent and Phil Evans clung to the rail and wondered if the cyclone were not playing their game in destroying the aeronef and with her the inventor, and with the inventor the whole secret of his invention.

But if the *Albatross* could not get out of the cyclone vertically, wasn't it clear that there was only one other thing to do: to reach the centre, where it was comparatively calm, where

she would be easier to control? Yes: but to reach it she would have to break through the circular currents which were sweeping her around. Had she enough mechanical power to get out of them?

Suddenly the upper part of the cloud collapsed. The vapour condensed in torrents of rain.

It was two in the morning. The barometer, oscillating over a range of several inches, had now fallen to ten inches, from which something had to be allowed for the decrease in pressure due to the height of the aeronef above sea-level.

What was most unusual, the cyclone had formed outside the zone usually traversed by such storms, between the thirtieth parallel of north latitude and the twenty-sixth parallel of south. This may perhaps explain why the eddying storm suddenly became a direct gale. But what a hurricane! The tempest in Connecticut on March 22nd, 1882, could alone have been compared with it; its speed was 500 feet a second, more than 300 miles an hour.

The *Albatross* therefore had to fly before a stern wind, like a ship before a gale, or rather she had to let herself be driven by the current from which she could neither climb nor escape. But in following this unchanging trajectory she was flying due south, she was hurling herself towards those polar regions which Robur had sought to avoid. And now she was no longer able to choose her path; she would go wherever the hurricane took her!

Tom Turner was at the helm, and it required all his skill to keep her from being turned broadside on.

In the first hours of the morning—if one can so call the vague tint which marked the horizon—the *Albatross* was fifteen degrees below Cape Horn—more than twelve hundred miles—and she had already crossed the Antarctic circle. There, in this month of July, the night lasts nineteen hours and a half. The sun's disk—without warmth, without light—appeared above the horizon only to disappear almost immediately. At the Pole the night lasts for a hundred and seventy-

nine days. Every thing showed that the *Albatross* was as though about to plunge into an abyss.

During the day an observation, had it been possible, would have given 66° 40' South Latitude. The aeronef was thus not more than fourteen hundred miles from the South Pole.

Irresistibly drawn towards this inaccessible corner of the globe, her speed was so to speak 'eating up' her weight, although she weighed slightly more than before owing to the flattening of the earth at the Pole. Her lifting screws—it seemed as though she could have managed without them. And soon the fury of the storm reached such a height that Robur thought it best to reduce the speed of her propulsive screws to the very minimum, so as to avoid serious damage but so as to retain steerage-way, while having as little proper speed as possible.

Amid these dangers the engineer gave his orders with imperturbable coolness, and the crew obeyed as if the spirit of their leader had entered into them. Uncle Prudent and Phil Evans had not left the deck for a moment; they could now stay upon it without any inconvenience. The air offered only slight resistance. The aeronef resembled a balloon, which drifts with the fluid mass in which it is submerged.

The domain of the South Pole comprises, it is said, over 5,000,000 square miles. Is it a continent? Is it an archipelago? Or is it a paleocrystalline sea, whose ice does not melt even during the long summer? Nobody knows. But what is known is that the Southern Pole is colder than the Northern—a phenomenon due to the position of the earth in its orbit during the Antarctic winter.

During this day nothing suggested that the storm was abating. It was by the seventy-fifth western meridian that the *Albatross* was going to cross into the circumpolar region. By what meridian would she come out—if she ever did?

The more she descended towards the south, the more the length of the day diminished. Before long she would be

plunged into that continuous night which is illuminated only by the rays of the moon or the pale gleam of the aurora. But the moon was then new, and the companions of Robur were likely to see nothing of the regions whose secret has hitherto eluded human curiosity.

Very likely the *Albatross* would pass above several places already known, a little beyond the polar circle, to the west Graham Land, discovered by Biscoe in 1832, and Louis Philippe Land, discovered in 1838 by Dumont d'Urville, the furthest limits reached on this unknown continent.

Nobody on board suffered much inconvenience from the cold, for the temperature was not nearly so low as might have been feared. It seemed that the hurricane was a sort of aerial Gulf Stream, which carried a certain warmth with it.

It was greatly to be regretted that the whole region was plunged into such profound obscurity. Even if the moon had lit up space, it must be pointed out that few observations could be made. At this season of the year an immense curtain of snow, an icy shield, covers the whole polar surface. There was none of that ice 'blink' to be seen, that whitish tint whose reflection was absent from these dark horizons.

In these conditions, how could the form of the land be distinguished, the extent of the seas, the distribution of the islands? The hydrographic network of the country, how could it be recognized? Its very orographic configuration, how could it be mapped, when the hills or mountains are confused with the icebergs, with the icebanks?

A little before midnight, an aurora australis lit up the shadows. With its silver edgings, its layers which radiated across space, this seemed like a gigantic fan, opened to cover half of the sky. The apex of this electric gleam was lost in the Southern Cross, whose four stars were shining in the zenith. The phenomenon was incomparably magnificent, and it was clear enough to show the whole region as a confused mass of whiteness.

It need not be said that in these regions so close to the South Magnetic Pole the compass needle was constantly affected, and gave no precise indication of the course they followed. Its inclination was such that at a certain moment Robur felt certain they were passing over this magnetic pole situated near the seventy-eighth parallel. And later, about one in the morning, on calculating the angle the needle made with the vertical, he exclaimed —

‘The South Pole is beneath our feet!’

A white capping was visible, but nothing could be seen of what was hidden under its ice.

A few minutes afterwards the aurora australis died away, and this ideal point, the meeting point of all the world’s meridians, is still to be discovered.

Certainly, if Uncle Prudent and Phil Evans wished to bury in the most mysterious of the solitudes the aeronef and those whom she was carrying through space, the moment was propitious. If they did not do so it was doubtless because the equipment they needed was still missing.

But the hurricane was still raging and swept along with such speed that had the *Albatross* encountered any mountain she would have been dashed to pieces like a ship on the rocks. Not only was she unable to steer horizontally, she no longer had the power to control her height.

Yet a few summits rise in these Antarctic lands. Any instant a shock was possible sufficient to destroy the *Albatross*. Such a catastrophe was more to be feared in that the wind had shifted more to the east after they had passed the zero meridian. Two luminous points then showed themselves about sixty miles ahead of the *Albatross*.

These were the two volcanoes which form part of the Ross Mountains, Erebus and Terror.

Was the *Albatross* to be burned in their flames like a gigantic butterfly?

There was an hour of intense excitement. One of the volcanoes, Erebus, seemed to be hurling itself at the aeronef,

which could not deviate from the course of the hurricane. The plumes of flame expanded before their very eyes. A network of fire barred their road. An intense glow filled the whole of space, giving an infernal appearance to the figures of those on board. Motionless, without a sound or gesture, they waited for the terrible moment when the furnace would wrap them in its fires.

But the storm that was sweeping the *Albatross* along saved them from such a fearful fate. Driven downwards by the hurricane, the flames of Erebus let her pass safely by. It was through the midst of a hail of ejected material, which was fortunately thrust aside by the centrifugal action of the suspensory screws, that she swept over that crater in full eruption.

An hour later, the horizon hid from sight the two colossal torches which light the confines of the world during the long polar night.

At two in the morning Ballery Island was sighted at the end of the coast of Discovery Land, though it went unrecognized, being united to the mainland by a cement of ice.

Then the *Albatross* emerged from the polar circle on the 175th meridian. The hurricane had carried her over the ice-bank and the icebergs, against which she had risked a hundred times being dashed. She was not in the hands of the helmsman, but in the hand of God—and God is a good pilot.

The aeronef then regained the meridian of Paris, which makes an angle of 105° with that along which she had crossed the Antarctic Circle.¹

At last, beyond the sixtieth parallel the storm showed a tendency to die out. Its violence diminished perceptibly. The *Albatross* began to come under control and—what was a great relief—she had returned to the lighted regions of the globe; and the day reappeared about eight in the morning.

Robur and his men, after having escaped from the cyclone

This meridian of course extends right round the earth, and the *Albatross* was regaining its extension.—I.O.E.

off Cape Horn, had been delivered from the gale. They had been swept towards the Pacific across the whole polar region after having traversed 4,350 miles in nineteen hours—more than three miles a minute—a speed almost double that which the *Albatross* could reach with her propellers under ordinary circumstances.

But owing to the disturbance of the needle in the neighbourhood of the Magnetic Pole, Robur would have to wait till the sun showed itself in conditions suitable for taking his bearings. Unfortunately, heavy clouds covered the sky that day, and the sun did not appear. This was a disappointment more keenly felt, as both propelling screws had sustained damage during the tempest.

Robur, much disconcerted at this accident, could advance only at a moderate speed that day, and when he passed over the antipodes of Paris he could not reach more than eighteen miles an hour. He had above all to take care not to increase the damage. If the two propellers were put out of action, the aeronef's position above the vast seas of the Pacific would be seriously compromised. So the engineer began to wonder whether he ought not to effect his repairs on the spot, so as to make sure of continuing his voyage.

Next day, July 27th, about seven in the morning, land was sighted to the north. It was soon seen to be an island. But which island, out of the thousands with which the Pacific is strewn? However, Robur decided to stop above it without landing. In his opinion, a day would suffice for the repairs, and he could set off again that very evening.

The wind had died away completely—a favourable circumstance for the manoeuvre he had to execute. At least, as long as she remained stationary, the *Albatross* would not be carried he knew not where.

A cable one hundred and fifty feet long with an anchor at the end was dropped overboard. When the aeronef reached the shore of the island the anchor scraped over the first reefs and then got firmly fixed between two large rocks. The cable

was then pulled taut under the action of the lifting screws, and the *Albatross* stayed motionless, riding like a ship anchored in a roadstead.

It was the first time she had been tethered to the earth since leaving Philadelphia.

CHAPTER XVI

In Which Things Happen That Certainly Deserve Mention

WHEN THE *Albatross* was still aloft the island could be seen to be of moderate size. But on what parallel was it 'situated? What meridian ran through it? Was it an island of the Pacific, of Australasia, or of the Indian Ocean? This would not be known until Robur had taken his bearings; but although they could not rely on the indications of the compass there was reason to think they were in the Pacific. As soon as the sun appeared conditions would be excellent for taking the bearings accurately.

At this height—one hundred and fifty feet—the island, which measured about fifteen miles round, looked like a three-pointed star-fish.

Off the south-west point was an islet and a line of rocks. On the shore, no tidemarks—which tended to confirm Robur's position regarding his position, for the ebb and flow are almost negligible in the Pacific.

At the north-west point rose a conical hill, apparently about twelve hundred feet high.

No natives were to be seen, but they might be on the opposite coast. Still, if they had seen the aeronef, terror had made them hide themselves or run away.

It was on the south-east point that the *Albatross* had anchored. Not far away, down a little creek, a stream flowed among the rocks. Beyond were several winding valleys; trees of different kinds, and birds—partridges and bustards—in great numbers. If the island were not inhabited it seemed habitable. Robur could certainly have landed on it; if he had not done so it was probably because the uneven ground did not seem likely to offer a suitable spot to beach the aeronef.

While he was waiting to take her bearings, the engineer began the repairs he hoped to complete before the day was over. The lifting screws, still in perfect condition, had worked admirably amid all the violence of the storm, which, as has been explained, had considerably lightened their work. At this moment half of them were in action — enough to keep taut the cable secured perpendicularly to the ground.

But the two propellers had suffered, more indeed than Robur had thought. Their blades would have to be re-shaped and adjustments made to the gearing which transmitted the rotatory movement to them.

It was the screw at the bow upon which the crew first began work under Robur's supervision. It was better to start with this, in case the *Albatross* had to leave for any reason before the work was finished. With only this propeller he could easily keep well on course.

Meanwhile Uncle Prudent and his colleague, after walking about the deck, had sat down aft. Frycollin was strangely reassured. What a difference! To be suspended only one hundred and fifty feet from the ground!

The work was interrupted only at the moment when the elevation of the sun above the horizon allowed Robur to take his bearings.

The result of the observation, made with the greatest exactitude, was as follows:

Longitude, 176 deg. 17 min. east

Latitude, 43 deg. 37 min. south

This point on the map answered to the position of Chatham Island.

'That's nearer than I thought,' Robur told Tom Turner.

'Then we're at . . . ?'

'Forty-six degrees south of X Island, about two thousand eight hundred miles.'

'All the more reason to repair our propellers,' replied the mate. 'On this trip we might have the wind against us, and

with the few stores we've got left we ought to get to X as soon as we can.'

'Yes, Tom, and I hope to get under way tonight, even if I have to go with only one screw, and put the other to rights on the voyage.'

'Mr Robur,' asked Tom, 'what about those two gentlemen and their servant?'

'Do you think they'd have anything to complain of if they become colonists of X Island?'

But where was this X Island? An island lost in the immensity of the Pacific Ocean between the Equator and the Tropic of Cancer—an island most appropriately named by Robur in this algebraic fashion. It was in the neighbourhood of the Marquise Archipelago, outside the routes of inter-oceanic communication. There it was that Robur had founded his little colony, there that the *Albatross* rested when tired with her flight, there that she was provisioned for her endless voyages. In X Island, Robur, a man of immense wealth, had set up a shipyard and built his aeronef. There he could repair her, and even rebuild her. In his warehouses were material and provisions of all sorts, stored for the benefit of the fifty inhabitants, the only population of the island.

When Robur had doubled Cape Horn a few days before, his intention had been to regain X Island by crossing the Pacific obliquely. But the cyclone had seized the *Albatross* in its blast, and the hurricane had carried her away to the south. In short, he had been brought back to much the same latitude as before, and but for the damage to his propellers the delay would have been of little importance.

So he meant to get back to X Island; but as the mate had said, it was still a long journey. They would probably have to struggle against contrary winds, but the mechanical power of the *Albatross* was quite equal to taking her to her destination within the time available. In moderate weather, and at her normal speed, the journey could be carried out in three or four days.

Hence Robur's motives for waiting at Chatham Island. There he would find every opportunity for repairing at least the screw at the prow. He had no fear that if a contrary wind were to rise he would be driven to the south when he wanted to go north. When night came the repairs would be finished, and he would have to manoeuvre so as to detach his anchor. If it were too firmly fixed in the rocks, it would be enough for him to cut the cable and resume his flight towards the Equator. This method of going to work would obviously be easiest, and it would be carried out efficiently.

The crew of the *Albatross*, knowing there was no time to lose, set to work vigorously.

While these were busy in the bow of the aeronef, Uncle Prudent and Phil Evans held a conversation which was to have exceptionally serious consequences.

'Phil Evans,' said Uncle Prudent, 'you are quite resolved, as I am, to sacrifice your life?'

'Yes, like you.'

'For the last time it's clear that we can expect nothing from this Robur.'

'Nothing.'

'Well, Phil Evans, I've made up my mind. If the *Albatross* sets off this evening, the night shall not pass without our having accomplished our task! We'll smash the wings of this bird of Robur's! This very night it shall blow up in the air!'

'Let it blow up, then,' agreed Phil Evans.

It will be seen that the two colleagues were agreed on all points, even when it came to accepting with indifference the frightful death in store for them.

'Have you got all you want?' asked Phil Evans.

'Yes. Last night, while Robur and his people had their hands full looking after the safety of the ship, I was able to slip into the magazine and get hold of a dynamite cartridge.'

'Let's get to work, Uncle Prudent.'

'No. Not till this evening. When night comes we'll go into our cabin, and you take care that nobody surprises me.'

At six o'clock the colleagues dined as usual. Two hours later they retired to their cabin like men who wished to make up for a sleepless night.

Neither Robur nor any of his companions had any suspicion of the catastrophe that threatened the *Albatross*.

This was what Uncle Prudent meant to do.

As he had said, he had crept into the magazine which was, in one of the compartments of the aeronef's hull. There he had been able to get some gunpowder and a dynamite cartridge like the ones which Robur had used in Dahomey. Returning to his cabin, he had carefully hidden the cartridge with which he was resolved to blow up the *Albatross* that night, when she was in flight in mid-air.

Phil Evans was now examining the infernal machine which his companion had stolen. It was a bomb whose metallic canister contained about two pounds of explosive, enough to damage the aeronef and smash her array of screws. If the explosion did not destroy her at once, her fall would finish her off. Nothing was easier than to place this cartridge in a corner of the cabin, so that it would blow in the deck and rip the air-frame asunder.

But to produce the explosion it was necessary to touch off the fulminating cap with which the cartridge was fitted. This was the most delicate part of the operation, for the explosion would have to be very precisely timed.

Uncle Prudent had carefully thought this over. As soon as the propeller in the prow was repaired the aeronef would resume her course to the north, and that done Robur and his crew would probably come aft to put the other screw in order. The presence of all these people about the cabin might interfere with Uncle Prudent's plans, so he had decided to use a slow match so as not to cause the explosion before the proper time.

'When I got the cartridge,' he said to Phil Evans, 'I took some gunpowder. With the powder I'm going to make a fuse whose length will depend on the time it takes to burn, and

which will lead into the fulminate. My idea is to light it about midnight, so that the explosion will take place about three or four in the morning.'

'A good idea!' said Phil Evans.

The colleagues, it is clear, had arrived at such a state as to look with the greatest nonchalance on the awful destruction in which they were about to perish. So intense was their hate of Robur and his people that the sacrifice of their own lives seemed worth while if they were to destroy the *Albatross* and all she bore. That this act was senseless and even horrible, agreed! But this was what they had come to after five weeks of anger that could not vent itself, of rage that could not be gratified.

'And Frycollin?' asked Phil Evans, 'have we any right to dispose of his life?'

'We shall be sacrificing ours as well!' Uncle Prudent replied.

It is doubtful if Frycollin would have thought the reason sufficient.

Uncle Prudent at once set to work, while Evans kept watch in the neighbourhood of the cabin.

The crew were all busy forward. There was no fear of being surprised.

Uncle Prudent began by crushing a small quantity of the powder so as to reduce it to a very fine dust; then, having slightly moistened it, he wrapped it up in a cloth tube to form a fuse. Having lighted it, he calculated it would burn about an inch in five minutes, or a yard in about three hours. The fuse was then put out, strengthened by wrapping it round with string, and attached to the cartridge cap. This work was completed at about ten in the evening without having excited the least suspicion, and Phil Evans then came to join his colleague in the cabin.

During the day the repair on the fore-screw had been very actively carried on, but it had had to be taken on board to adjust the blades, which had been distorted. The batteries and

accumulators and the machinery that drove the ship had not been damaged by the violence of the storm and there was still enough food for another three or four days.

When night fell Robur and his men stopped work. The propeller had not been put back into place at the prow and another three hours of repairs would be needed to get it ready to work. After some conversation with Tom Turner the engineer had decided to give his exhausted crew a rest, and to postpone to next day what required to be done.

The final adjustment was a matter of extreme nicety, and the electric lamps did not give so suitable a light for such work as the daylight.

Uncle Prudent and Phil Evans were not aware of this. They had understood that the screw would be replaced during the night, and that the *Albatross* would at once continue her flight to the north. They imagined that they had left the island, but they were still anchored to it. This would make things turn out very differently from what they supposed.

A dark and moonless night. Heavy clouds made the darkness deeper. A light breeze began to rise. A few puffs came from the south-west, but they had no effect on the *Albatross*. She remained motionless at anchor; the cable, stretched vertically, held her to the ground.

Shut in their cabin, Uncle Prudent and his colleague exchanged only a few words as they listened to the f-r-r-r of the suspensory screws, which drowned every other sound on board. They were waiting until the moment came to act.

A little before midnight Uncle Prudent said, 'Time!'

Under the berths in the cabin was a sliding box which served as a drawer. It was into this that Uncle Prudent put the dynamite and the fuse. Here the slow match would burn without betraying itself by its smoke or spluttering. Uncle Prudent lit its end. Then, pushing the box back under the berth, he said — 'Now let's go aft and wait.'

They went out, and were amazed not to find the steersman at his post.

Phil Evans leant out over the rail.

'The *Albatross* is still in the same place, he said in a low voice. 'The work can't be finished. They haven't started!'

Uncle Prudent made a gesture of disappointment.

'We shall have to put the fuse out,' he said.

'No,' said Phil Evans, 'we've got to escape.'

'Escape?'

'Yes! down the anchor cable now that it's dark! Fifty yards to slide down — that's nothing!'

'Nothing, of course, Phil Evans, and we'd be fools not to take such an unexpected chance.'

But first they went back to the cabin and fetched all they could carry, with a view to a more or less prolonged stay on Chatham Island. Then they shut the door and crept noiselessly forward, meaning to wake Frycollin and make him come with them.

The darkness was intense. The clouds were racing up from the south-west. Already the aeronef was tossing a little at her anchor, and thus throwing the cable somewhat out of the vertical. To get down it would be rather more difficult. But that was not going to stop men who were quite ready to risk their life.

The colleagues made their way along the deck, stopping in the shadow of the deck-houses to listen in case there were any sound. Dead silence everywhere. No light shone from the portholes. The aeronef was not only silent; she was asleep.

Uncle Prudent was close to Frycollin's cabin when Phil Evans stopped him.

'The look-out!' he said.

A man was crouching near the deck-house. He was only half asleep. All flight would be impossible were he to give the alarm.

Close by were a few ropes and pieces of rag and waste used in repairing the screw.

An instant later, and the man was gagged and blindfolded

and lashed to one of the uprights of the rail, unable to move or utter a sound.

This was done almost silently.

Uncle Prudent and Phil Evans listened. All was quiet within the cabins. Every one on board was asleep.

The two fugitives—if that was what they ought to be called—reached Frycollin's cabin. Tapage was snoring away in a style worthy of his name, and that was reassuring.

To his great surprise, Uncle Prudent had not even to push Frycollin's door. It was open. He stepped into the doorway; then, as he came out—

'Nobody here!' he said.

'Nobody! Where can he be?' muttered Phil Evans.

They crawled forward, thinking Frycollin might perhaps be asleep in some corner.

Still nobody.

'Has the rascal got the start of us?' asked Uncle Prudent.

'Whether he has or not,' Phil Evans replied, 'we can't wait any longer. Let's get away!'

Without hesitation, one after the other, the fugitives, seizing the cable with hands and feet, slid down it safe and sound to the earth.

What a pleasure for them to tread that earth they had missed for so long—to walk on solid ground and to be no longer the playthings of the atmosphere!

They were getting ready to make for the interior of the island up the creek when suddenly a form rose in front of them.

It was Frycollin.

Yes, the Negro had had the same idea as his master and had had the cheek to start without telling him.

But this was not the time for recriminations, and Uncle Prudent was about to set off in search of a hiding-place, somewhere on the island, when Phil Evans stopped him.

'Listen, Uncle Prudent,' said he. 'Here we are out of the hands of Robur. He's doomed, like his companions, to a

terrible death. He deserves it. Yes! But if he would swear on his honour not to try to recapture us—'

'The honour of such a man—'

Uncle Prudent could not complete his sentence.

Something was astir on board the *Albatross*. The alarm had obviously been given. The escape had been discovered.

'Help! Help!' shouted somebody.

It was the look-out man, who had managed to get rid of his gag. Hurried footsteps resounded on deck. Almost at once the electric lights shot their beams over a wide circle.

'There they are! There they are!' shouted Tom Turner.

The fugitives had been seen.

At the same time an order was shouted by Robur and, the lifting screws being slowed and the cable hauled in on board, the *Albatross* sank towards the ground.

Then the voice of Phil Evans could be heard shouting—

'Engineer Robur, will you give us your word of honour to leave us free on this island?'

'Never!' exclaimed Robur.

And the reply was followed by the report of a gun, whose bullet grazed Phil Evans' shoulder.

'Ah! The brutes!' Uncle Prudent shouted. And, knife in hand, he rushed towards the rocks between which the anchor had got fixed. The aeronef was not more than fifty feet from the ground. . . .

In a few seconds the cable was cut, and the breeze, which had increased considerably, striking the *Albatross* on the quarter, carried her north-eastwards out over the sea.

CHAPTER XVII

Which Will Leave the Reader in a Perhaps Regrettable Indecision

IT WAS then twenty minutes after midnight. Five or six shots had been fired from the aeronef. Uncle Prudent and Frycollin, supporting Phil Evans, had taken shelter among the rocks.

They had not been hit. For the moment there was nothing to fear.

As the *Albatross* drifted off from Chatham Island, she rose obliquely to nearly three thousand feet. Her ascensional power had to be increased to keep her from falling into the sea.

When the look-out man, free from his gag, had given his first shout, Robur and Tom Turner had rushed up to him and torn off his blindfold and the ropes that bound him. Then the mate had run back to the cabin of Uncle Prudent and Phil Evans. It was empty! Meanwhile Tapage had searched Frycollin's cabin, and it too was empty.

When he saw that his prisoners had escaped, Robur made an angry gesture. The escape meant that his secret, his identity, would be revealed to the world. If he had not been much concerned at the document thrown overboard while they were crossing Europe, it was because there were so many chances that it would be lost in its fall . . . but now —!

As he grew calm —

'They have escaped,' said he. 'All right! But they can't get away from Chatham Island, and in a few days I'll go back! I'll hunt for them. . . . I'll recapture them! And then —'

The safety of the three fugitives was certainly far from being assured. The *Albatross* would be repaired and it would not take long to get back to Chatham Island, from which the fugitives could not escape. Before the day was out they might again be in the engineer's power.

Before the day was out! But in two hours the *Albatross* would be annihilated! That dynamite cartridge—was it not like a torpedo fastened to her hull, and would it not bring about her destruction in mid-air?

The breeze freshened, and the aeronef was carried to the north-west. Although her speed was only moderate, she would have lost sight of Chatham Island before sunrise.

To return against the wind she must have her propellers, or at least the one in the bow, ready to work.

'Tom,' said the engineer, 'turn the lights full on.'

'Yes, sir.'

'And all hands to work.'

'All of us,' the mate agreed.

There was no longer any question of putting off the work till tomorrow. There was no thought now of fatigue. There was not one of the men of the *Albatross* who did not share the feelings of his chief. Not one but was ready to do anything to recapture the fugitives!

As soon as the screw was in place they would return to the island, anchor themselves again, and give chase to the fugitives. Then only would they begin repairing the stern-screw; and then the aeronef could resume her return trip across the Pacific to X Island.

It was important, however, that the *Albatross* should not be carried too far to the north-east. Unfortunately the breeze was getting stronger, and she could not make headway against it or even remain stationary. Deprived of her propellers she had become an undirigible balloon. The fugitives on the shore realized that she would have disappeared before the explosion blew her to pieces.

This state of affairs was bound to make Robur uneasy regarding his future plans. Would it not take him much longer than he thought to get back to the island?

While the work at the screw was actively pushed on, he resolved to descend near the surface of the sea, in the hope that there he would meet a more gentle wind. Perhaps the

Albatross would be able to remain in the neighbourhood until she was again fit to work to windward?

The manoeuvre was at once carried out. If a passing ship had sighted the aerial machine, with her electric lights in full blaze, with what terror would her crew have been seized!

When the *Albatross* was only a few hundred feet from the waves she stopped.

Unfortunately, Robur had to realize, the wind was blowing more strongly here than above, and the aeronef was carried off more rapidly. He risked being blown a long way off to the north-west, and that would delay his return to Chatham Island.

In short, after several experiments, he found it better to keep his ship well up in the air, and the *Albatross* went aloft to about ten thousand feet. There, if she did not remain stationary, at least her drift was very slight. The engineer could thus hope that by sunrise at such an altitude he would still be in sight of the island, whose exact bearings he had already obtained.

As to whether the fugitives would be welcomed by the natives, if the isle were inhabited, Robur cared little for that. That the natives might help them mattered little to him. With the offensive weapons possessed by the *Albatross* they would soon be terrified and dispersed. The capture of the prisoners was certain and once they were taken — 'Nobody escapes from X Island!' he said.

About one in the morning, the fore-screw was repaired. All that had to be done was to get it back to its place, and that would take about an hour. This done, the *Albatross* would return south-west and the stern-screw would be dismantled.

And that fuse that was burning in the deserted cabin? That fuse of which more than a third was now consumed? And that spark which was making its way towards the dynamite cartridge?

Assuredly if the men of the aeronef had not been so busy one of them might have heard the feeble sputtering going on in the deck-house. Perhaps he would have smelt the burning

powder? He would have become uneasy. He could have warned the engineer or Tom Turner. And then they would have looked about, and found the box with the infernal machine inside it; and then there would have been time to save this wonderful *Albatross* and all she bore!

But the men were working in the bow, twenty yards away from the cabin. Nothing brought them to that part of the deck; nothing called them away from their work, which demanded all their attention.

Robur himself was there working with his hands, excellent mechanic as he was. He hurried the work on, but neglected nothing to ensure that everything was done with the greatest care! Wasn't it essential for him again to become absolute master of his invention? If he did not recapture the fugitives they would get back to their own country. Then investigations would follow, X Island might not go undiscovered and that would be an end to this life, which the men of the *Albatross* had created for themselves — a life superhuman, sublime.

And here Tom Turner came up to the engineer. It was a quarter past one.

'Mr Robur,' he said. 'It seems to me that the breeze is falling, and going round to the west into the bargain.'

'What does the barometer say?' asked Robur, after looking up at the sky.

'It's almost stationary, and the clouds seem gathering below us.'

'So they are, and it may be raining down at sea level: but if we keep above the rain it makes no difference to us. It won't interfere with the work.'

'If it is raining,' Tom replied, 'it must be a fine rain — at least that's what the clouds seem to show — and very likely the wind has dropped altogether down there.'

'No doubt, Tom,' Robur replied, 'but I don't think we'd better go down yet. Let's finish repairing the damage and then we can go wherever we like. That's everything.'

A few minutes after two the first part of the work was

finished. The screw was back in place at the prow and the batteries which actuated it were switched on. The speed was gradually increased, and the *Albatross*, heading to the south-west, returned at moderate speed towards Chatham Island.

'Tom,' said Robur, 'it is about two hours and a half since we were carried off to the north-east. According to the compass the wind hasn't changed at all. I think we ought to be over the island in an hour at most.'

'Yes, sir. We're going about forty feet a second. About half-past three the *Albatross* ought to be back where she started from.'

'All the better. It would suit us best to get back while it's dark, and even to land without being seen. Those fellows will fancy we are a long way off to the northward, and never think of keeping a look-out. When the *Albatross* has almost grounded, we'll hide her behind the rocks. Then, if we have to spend several days at Chatham Island—'

'We'll spend them, Mr Robur, and if we have to fight an army of natives—'

'We'll fight,' said Robur. 'We'll fight for our *Albatross*.'

The engineer went forward to the men, who were waiting for orders.

'My lads,' he said to them, 'it isn't time to knock off yet. We must work till day comes.'

All were ready to do so.

The next job was to repair the stern-screw just as they had the one at the prow. The damage was the same and due to the same cause, the violence of the hurricane during the passage across the Antarctic Continent.

But to get the screw on board it seemed best to stop the progress of the aeronef for a few minutes, and even to drive her backwards. On Robur's orders, the assistant engineer put the engines astern, by reversing the rotation of the forward screw. The aeronef began to back-water, as the sailors say, and they were all going towards the stern when Tom Turner was surprised by a peculiar odour.

This was from the gas given off by the fuse, which had accumulated in the box and was now escaping from the cabin.

'Hallo!' said the mate.

'What's the matter?' asked Robur.

'Don't you smell something? . . . Anybody would say it was burning powder.'

'So it is, Tom.'

'And that smell comes from the after cabin.'

'Yes, the very cabin —'

'Have those wretches set it on fire?'

'Suppose it isn't only fire!' exclaimed Robur. 'Force the door, Tom; drive in the door!'

But the mate had hardly made one step towards it when a fearful explosion shook the *Albatross*.

The cabins flew into splinters. The lamps went out as the electric current suddenly failed, and darkness was total. Still, if most of the lifting screws were smashed, and put completely out of action, a few in the bow still revolved.

Suddenly the aeronef's hull gaped open just behind the first deck-house, where the accumulators for the screw at the prow were still working; and the after-part of the deck collapsed into space.

Almost at once the last of the suspensory screws stopped rotating, and the *Albatross* was hurled into the abyss.

It was a fall of ten thousand feet for the eight men clinging, like shipwrecked seamen, to the wreck; and the fall was even faster than it might have been, for the fore-propeller, after being turned on end, was still working!

It was then that Robur, with extraordinary presence of mind, climbed up to the half-broken deck-house, seized the lever which controlled the screw and reversed its rotation, so that from being propulsive it became suspensive.

A fall, certainly, although it was somewhat checked; but the wreck did not drop with the increasing speed of bodies left to the effects of their own weight. And, if it was death to the

survivors of the *Albatross* from their being hurled into the sea, it was not death by asphyxia in the midst of the air which the rapidity of the descent rendered unbreathable.

Eighty seconds, at most, after the explosion, all that remained of the *Albatross* had plunged into the waves!

CHAPTER XVIII

Which Goes Two Months Back and Then Jumps Nine Months Ahead

SOME WEEKS earlier, on June 13th, on the morning after the sitting during which the Weldon Institute had been given over to such stormy discussions, the excitement of all classes of the Philadelphian population, black or white, was much easier to imagine than to describe.

From a very early hour conversation was entirely devoted to the unexpected and scandalous incident of the night before. A stranger calling himself an engineer, and answering to the unlikely name of Robur—Robur the Conqueror—a person of unknown origin, of nameless nationality, had unexpectedly presented himself in the club-room, insulted the balloonists, made fun of the aeronauts, boasted of the marvels of flying-machines heavier than air, and raised a frightful tumult by the threats with which he had returned those of his adversaries. After leaving the platform in the din of a volley of revolver shots, he had disappeared, and, in spite of every endeavour, nobody had heard of him again.

Here was certainly enough to exercise every tongue and inflame every imagination. This was so in Philadelphia, in the thirty-six States of the Union, and, to tell the truth, as well in the Old as in the New World.

But how much greater was the excitement when in the evening of June 13th it was ascertained that neither the president nor the secretary of the Weldon Institute had returned to their homes. Reliable folk, too, honourable and intelligent. They had left the council chamber like citizens who thought only of going home, like bachelors without any frowning face to welcome them on the doorstep. Was it by chance only that they were absent? No, or at least there was nothing to suggest

this. It had even been agreed that in the morning they would be back at the club office, the one as president, the other as secretary, to take their places during a discussion on the events of the preceding evening.

And not only was there the complete disappearance of these two considerable personages in the State of Pennsylvania, but there was no news of the valet Frycollin. He was as undiscoverable as his master. No! Never since Toussaint L'Ouverture, Soulouque, or Dessaline had a Negro been so much talked about.¹

The next day, nothing. Neither the colleagues nor Frycollin had reappeared. Serious disquiet. Agitation began. A numerous crowd at the post and telegraph offices to know if any news had come.

Nothing yet.

And they had been seen coming out of the Weldon Institute loudly talking together, and with Frycollin in attendance going down Walnut Street towards Fairmont Park!

Jem Cip, the vegetarian, had even shaken hands with the president and left him with 'Tomorrow!'

And William T. Forbes, the manufacturer of sugar from rags, had received a cordial grasp of the hand from Phil Evans, who had twice said, 'Au revoir! Au revoir!'

Miss Doll and Miss Mat Forbes, so attached to Uncle Prudent by the bonds of purest friendship, could not get over the disappearance, and, to obtain news of the absent, talked even more than usual.

Three, four, five, six days passed. Then a week, then two weeks. Nobody and nothing to give a clue to the vanished three.

The most minute search had been made in every quarter. Nothing! In the streets leading to the harbour. Nothing! In the park, even under the trees and brushwood. Nothing! Always nothing!

¹ Leaders, during the early part of the nineteenth century, of revolts of the Negroes in Haiti against the whites.—I.O.E.

Yet it was noticed that in the large clearing the grass had been pressed down in a way that seemed suspicious and was certainly inexplicable; and at the edge of the wood there were traces of a recent struggle. Had a gang of scoundrels attacked the colleagues here in the deserted park in the middle of the night?

It was possible. The police proceeded with their inquiries in all due form and with all the slowness of the law. They dragged the Schuylkill River, and cut into the thick bushes that fringe its banks; and if this was useless it was not quite a waste, for the Schuylkill is in great want of a good weeding. It got it this time. Practical people, the *aediles* of Philadelphia!

Then the publicity of the press was appealed to. Advertisements and notices, if not protests, were sent to all the journals in the Union, democratic or republican, without distinction of colour. The *Daily Negro*, the special organ of the black race, published a portrait of Frycollin taken from his latest photograph. Rewards were offered to whoever would give news of the three absentees, and even to those who would find some clue to put the police on the track.

'Five thousand dollars! Five thousand dollars to any citizen who—'

Nothing happened. The five thousand dollars remained with the treasurer of the Weldon Institute.

'Undiscoverable! Undiscoverable! Undiscoverable! Uncle Prudent and Phil Evans of Philadelphia!'

It need hardly be said that the club was put to serious inconvenience by this inexplicable disappearance of its president and its secretary. And at first the assembly gave priority to a measure which suspended the work, well advanced as it was, on the *Go Ahead*. How, in the absence of the principal promoters of the affair, of those who had devoted to the enterprise so much of their fortune in time and money—how could they finish the work when these were not present? It were better, then, to wait.

And again, just at that time, attention was drawn to that

strange phenomenon which had exercised people's minds some weeks before.

The mysterious object had been again seen, or rather glimpsed, on various occasions in the higher regions of the atmosphere. But nobody dreamt of suggesting a connection between its singular reappearance, and the no less inexplicable disappearance of the members of the Weldon Institute. It would, in fact, have required a very strong dose of imagination to connect one of these facts with the other.

Whatever it might be, asteroid or aerolite or aerial monster, whichever one liked to call it, it had reappeared in such a way that its dimensions and shape could be much better realized. First in Canada, over the country between Ottawa and Quebec, on the very morning after the colleagues disappeared: then later over the plains of the Far West, where it had tried its speed against an express train on the Union Pacific Railway.

At the end of this day the doubts of the learned world were at an end. The body was not a natural product, it was a flying-machine, the practical application of the theory of 'heavier than air'. And if its creator, the inventor of the aeronef, had wished to keep himself unknown he could obviously have done better than to demonstrate it over the Far West. As to the mechanical force used, or the engines which converted it into motion, nothing was known. Anyhow, there could be no doubt about this, that the aeronef was gifted with an extraordinary faculty of locomotion. In fact, a few days later it was reported from the Celestial Empire; then over the Northern part of Hindustan; then over the broad Russian Steppes.

Who then was this bold mechanician who possessed such powers of locomotion, for whom the States had no frontiers and the oceans no limits, who disposed of the terrestrial atmosphere as if it were his domain? Could it be thought that it was this Robur whose theories had been so brutally thrown in the face of the Weldon Institute on the day when he had led the attack against that utopia of dirigible balloons?

Perhaps such an idea occurred to some perspicacious souls,

but—and this was very strange—nobody dreamed that the said Robur had anything to do with the disappearance of the president and the secretary of the Institute.

Things remained in this state of mystery when a telegram arrived in America from France via the New York cable at 11.37 a.m. on July 13th.

And what was the purport of this telegram? It was the text of the document found at Paris in a snuff-box—a document revealing what had happened to the two personages for whom the Union had gone into mourning.

So, then, the perpetrator of this kidnapping was Robur, the engineer, come expressly to Philadelphia to destroy the theory of the balloonists in its egg. He it was who commanded the aeronef *Albatross*! He it was who had carried off by way of reprisal Uncle Prudent, Phil Evans, and Frycollin into the bargain! And these three personages must be considered lost for ever, unless by finding some means of constructing an engine capable of contending with this powerful apparatus their terrestrial friends could succeed in bringing them back to earth.

What excitement! What bewilderment! The telegram from Paris had been addressed to the office of the Weldon Institute. The members of the club were immediately informed of it. Ten minutes later all Philadelphia received the news through its telephones, and in less than an hour all America heard of it, for it was electrically transmitted through the innumerable wires of the New World.

No one would believe it! 'This must be a joke in very bad taste,' said some. 'All hot air!' said others. How could such a thing be done in Philadelphia, and so secretly, too? How could the *Albatross* have landed in Fairmont Park without its appearance having been noticed over the Pennsylvania horizons?

Very good. Such were the arguments. The incredulous had the right to doubt. But the right did not last longer than seven days after the receipt of the telegram. On July 13th, the

French mail-boat *Normandie* came into the Hudson, bringing the famous snuff-box. The New York railway took it with all speed to Philadelphia.

It was indeed the snuff-box of the president of the Weldon Institute. Jem Cip would have done better on that day to take some more substantial nourishment, for he nearly fell into a swoon when he recognized it. How many a time had he taken the pinch of friendship from it! And Miss Doll and Miss Mat also recognized it, that snuff-box which they had seen so often with the hope of one day dipping into it an old maid's skinny fingers! Then it was their father, William T. Forbes, Truk Milnor, Bat T. Fyn, and many others of the Weldon Institute! A hundred times they had seen it open and close in the hands of their revered president. Then they had on their side the witness of all Uncle Prudent's friends in that splendid city of Philadelphia, whose name indicates—it cannot be repeated too often—that its inhabitants love one another like brothers.

So it was no longer possible to keep the shadow of a doubt on this point. Not only the president's snuff-box but his writing, clear upon that document, forbade the most incredulous to shake their heads any more. So the lamentations began, and despairing hands were uplifted to heaven. Uncle Prudent and his colleagues, carried away in a flying-machine, without anyone being able to imagine any method of rescuing them!

The Niagara Falls Company, of whom Uncle Prudent was the largest shareholder, almost ceased business and turned off its cataracts. The Walton Watch Company thought of putting its factory into liquidation now that it had lost its director, Phil Evans.

Yes! There was widespread mourning, nor is the word mourning exaggerated. For, except for a few of the hotheads who are found even in the United States, nobody hoped to see the two honourable citizens again.

However, after its flight across Paris, no further talk was heard of the *Albatross*. A few hours later it had been seen over Rome, and that was all. This was not to be wondered at, given

the speed with which the aeronef had crossed Europe from north to south and the Mediterranean from west to east. Thanks to that speed, no telescope had been brought to bear, on it at any point whatever of its trajectory. In vain the observers kept their staff on watch day and night, the flying-machine of Robur the Conqueror had gone so far or so high — like Icarus, so to speak — that hopes were given up of ever getting on its trail.

It must be added that although its speed had been reduced over the African coast, as at that time the document had not yet been made public, nobody thought of looking for it in the heights of the Algerian sky. It had indeed been seen over Timbuctoo; but the observatory of that celebrated town — if it has one — had not yet had the time to send to Europe the result of its observations. As for the king of Dahomey, he would sooner have cut off the heads of twenty thousand of his subjects, including his ministers, than admit that he had had the worse of it in his battle with an aerial apparatus. Matter of *amour propre*.

After that, it was the Atlantic which Robur, the engineer, traversed. It was the Tierra del Fuego that he reached, and then Cape Horn. Then the southern lands and the immense domain of the Pole which he covered, somewhat in spite of himself. But no news was to be expected from these antarctic regions.

July elapsed, and no human eye could claim to have caught even a glimpse of the aeronef.

August passed, and uncertainty regarding Robur's prisoners was still complete. It was to be wondered whether the engineer, following the example of Icarus, the oldest aviator of whom history makes mention, had not fallen a victim to his own rashness.

At last the first twenty-seven days of September rolled by without any result.

Usually, in this world, one gets used to everything. It is a part of human nature to get hardened to griefs which fade

into the past. One forgets, because one has to. But this time, to its honour, the people of earth did not slide down that slope. No! They did not grow indifferent to the fate of the two white men and one black, caught up like the prophet Elijah, but of whom the Bible has not promised that they shall return to earth.

And this was as true of Philadelphia as of anywhere else, and here it was accompanied by some personal fears. By way of reprisals Robur had torn Uncle Prudent and Phil Evans from their birthplace. He had certainly avenged himself, though beyond all reason. But would he be satisfied with such a vengeance? Might he not want to extend it to several of the colleagues of the president and the secretary of the Weldon Institute? And how could say that he was safe from attack by this all-powerful master of the aerial regions?

And then, on September 28th, a rumour spread through the town: Uncle Prudent and Phil Evans had reappeared during the afternoon in the president's own home. And, what was most extraordinary, the rumour was true, although very few believed it.

They had, however, to give in to the evidence. These really were the two men, in person, and not their shades. And Frycollin also had come back!

The members of the Club, then their friends, then the crowd, hurried to Uncle Prudent's house. The two colleagues were acclaimed and passed from hand to hand in a burst of hurrahs and hips!

Jem Cip was there, having left his luncheon—a dish of boiled lettuces—and William T. Forbes and his daughters, Miss Doll and Miss Mat. That day Uncle Prudent could have married them both, if he had been a Mormon; but he wasn't one and didn't want to be one. There were also Truk Milnor, Bat T. Fyn, and all the members of the club. It is a mystery how Uncle Prudent and Phil Evans emerged alive from the thousands who welcomed them.

On that evening was the weekly meeting of the Institute.

It was expected that the colleagues would take their places in the office. As they had said nothing of their adventures—perhaps they hadn't been given time to speak?—it was hoped they would then relate the impressions of their voyage.

But for some reason or other both were silent. And so also was Frycollin, whose fellows had almost torn him to pieces in their delight.

But though the colleagues had not said, or did not want to say, what had happened to them, here it is.

No need to return to what occurred on the night of July 27th: the daring escape to the earth, the scramble among the rocks, the shot fired at Phil Evans, the cut cable, and the *Albatross*, deprived of her propellers, carried out to the open sea to the north-east and meanwhile rising to a great altitude.

Her electric lights allowed her to be followed for some time. But she had soon disappeared.

The fugitives had little to fear. How could Robur get back to the island, as his screws would be out of action for three or four hours? By that time the *Albatross*, destroyed by the explosion, would be no more than a wreck floating on the sea; those whom she bore would be mangled corpses, which the ocean would not give up again. The act of vengeance would have been accomplished in all its horror.

Uncle Prudent and Phil Evans, who looked upon it as an act of legitimate self-defence, felt no remorse whatever.

Evans had been but slightly wounded by the bullet fired from the *Albatross*. So the three made their way up from the shore in the hope of meeting some of the natives.

They were not disappointed. About fifty natives, living by fishing, dwelt on the western coast of Chatham Island. They had seen the aeronef descend on the island, and they welcomed the fugitives as if they were supernatural beings. They worshipped them, or nearly so. They lodged them in the most comfortable of their huts. Never had Frycollin had such a chance of passing himself off as the god of the blacks.

As they expected, Uncle Prudent and Phil Evans did not see

the aeronef return. They had to conclude that the catastrophe must have taken place in some high region of the atmosphere. Never more would anything be heard of Robur and his prodigious machine and its crew.

• Meanwhile, they had to wait for an opportunity of returning to America. Chatham Island is not much visited by navigators. So all August passed and the fugitives began to ask themselves if they had not exchanged one prison for another, which Frycollin, at all events, preferred to his aerial jail.

At last, on 3rd September, a ship came to water at Chatham Island. It will not have been forgotten that when Uncle Prudent was kidnapped he had on him several thousand paper dollars, much more than he needed to get back to America. After thanking their adorers, who were not sparing of their most respectful demonstrations, Uncle Prudent, Phil Evans and Frycollin embarked for Auckland. They said nothing of their adventures, and in two days they reached the capital of New Zealand.

There a Pacific mail-boat took them on board as passengers and, on the 20th of September, after a splendid passage, the survivors of the *Albatross* disembarked at San Francisco. They had said nothing as to who they were or whence they had come, but as they had paid a good price for their transport, there is no American captain who would have asked more.

At San Francisco they took the first train out on the Pacific Railway, and on the 27th they arrived at Philadelphia.

That is the compendious history of what had occurred since the escape of the fugitives and their departure from Chatham Island. And that is why that very evening the president and the secretary of the Weldon Institute could take their seats amid a most extraordinary attendance.

But never before had either of them been so calm. It did not seem, to look at them, as though anything abnormal had happened since the memorable sitting on June 12th. Three months and a half did not seem to count as anything in their lives.

After the first round of cheers, which both received without

showing the slightest emotion, Uncle Prudent put on his hat and spoke.

'Honourable citizens,' he said, 'the meeting is now open.'

Frantic and well-justified applause. For if it was not extraordinary that the meeting was open, it was at least extraordinary that it should be opened by Uncle Prudent and Phil Evans.

The president allowed the enthusiasm to subside in shouts and hand-clappings; then he continued:

'At our last meeting, gentlemen, the discussion was somewhat animated—(hear, hear)—between the partisans of the screw at the prow and those for the screw at the stern for our balloon the *Go Ahead*. (Signs of surprise.) We have found a way to bring into agreement the prowists and sternists. Here it is: we are going to use two screws, one at each end of the gondola!' (Silence and complete stupefaction.)

That was all.

Yes, all! Of the kidnapping of the president and secretary of the Weldon Institute, not a word! Not a word of the *Albatross* nor of Robur! Not a word of the voyage! Not a word of the way in which the prisoners had escaped! Not a word of what had become of the aeronef, whether it still flew through space, or whether they had to fear further reprisals on the members of the club!

Of course the balloonists were longing to ask Uncle Prudent and the secretary about all these things, but these looked so serious and so tight-lipped that they thought it best to respect their attitude. When they thought fit to speak they would do so, and it would be an honour to hear them.

After all, there might in all this mystery be some secret which could not yet be divulged.

And then Uncle Prudent, resuming his speech amid a silence hitherto unknown in the meetings of the Weldon Institute:

'Gentlemen,' he said, 'it now only remains for us to finish the aerostat *Go Ahead*, to which it is left to effect the conquest of the air! The meeting is closed.'

CHAPTER XIX

Which Ends This Veracious Story of the Albatross Without Really Ending It

ON APRIL 29th of the next year, seven months after the unexpected return of Uncle Prudent and Phil Evans, Philadelphia was astir. Nothing political this time. It was not a question of elections or meetings. The aerostat *Go Ahead*, constructed by the Weldon Institute, was at last to take possession of her natural element.

As aeronaut, the celebrated Harry W. Tinder, whose name was mentioned at the beginning of this story, with one assistant aviator. For passengers, the president and the secretary of the Weldon Institute. Did they not merit such an honour? Was it not their right to come in person to protest against any apparatus based on the principle of 'heavier than air'?

During the seven months, however, they had yet to speak of their adventures; and even Frycollin, however much he wanted to, had said not a word of Robur and his wonderful contrivance. No doubt, intransigent balloonists that they were, Uncle Prudent and his friend desired that no question should arise as to the merits of the aeronef, or any other flying-machine. Although the *Go Ahead* might not claim the first place among means of aerial locomotion, they would admit nothing about the inventions of the aviators. They believed, they would always believe, that the true atmospheric vehicle was the aerostat, and that to it alone the future belonged.

Besides, he on whom they had been so terribly—and in their opinion so justly—avenged, existed no longer. None of those who accompanied him had survived. The secret of the *Albatross* was now swallowed up in the depths of the Pacific!

As to admitting that Robur had some retreat, an island in the middle of that vast ocean, which he could use as his home

port, this was only a hypothesis; and the colleagues reserved to themselves the right of making enquiries on the subject later on.

So they could get on with the grand experiment for which the Weldon Institute had been preparing for so long and so carefully. The *Go Ahead* was the most perfect type of what had hitherto been invented in aerostatic art—she was what an *Inflexible* or a *Formidable* is in naval architecture.

The *Go Ahead* possessed all the qualities which an aerostat should have. Her dimensions allowed her to rise to the greatest height a balloon could attain; her impermeability enabled her to remain for an indefinite time in the atmosphere; her solidity would defy any expansion of the gas as well as the violence of the wind or rain; her capacity gave her an ascensional force large enough to lift, with all their accessories, an electric engine that would communicate to her propellers a power of locomotion superior to anything yet obtained.

The *Go Ahead* was of elongated form, which would facilitate her horizontal displacement. Her car was a gondola somewhat like that of the balloon used by Krebs and Renard, carrying all the equipment aeronauts find necessary: instruments, cables, grapnels, guide-ropes, etc., and the batteries and accumulators which generated her mechanical power. The car had a screw at the prow and a screw and rudder in the stern. But the output of her engine would probably be very much less than that of the apparatus of the *Albatross*.

After being inflated, the *Go Ahead* had been taken to the clearing in Fairmont Park, to the very spot where the aeronef had rested for a few hours.

Her ascensional power was derived from the very lightest of all the gaseous bodies. Ordinary lighting gas possesses an elevating force of about a pound and a half for every cubic yard. But hydrogen possesses an ascensional force estimated at two pounds and a half per cubic yard. Pure hydrogen, prepared by the method of the celebrated Henry Gifford, filled the enormous balloon. So, as the capacity of the *Go Ahead*

was 40,000 cubic yards, the ascensional power of the gas she contained was 40,000 multiplied by two and a half, or 100,000 pounds.

On this morning of April 29th, everything was ready. Since eleven o'clock the enormous aerostat had been swinging a few feet from the ground, ready to rise into the air.

Splendid weather and made specially for this important experiment. It might perhaps have been better if the breeze had been stronger, for then results might have been more conclusive. There had never been any doubt that a balloon could be guided in a calm atmosphere; but when the atmosphere is in motion it is quite another thing; and it is under such circumstances that the experiments ought to be tried.

However, there was no wind today, nor any sign that it would rise. Strange to say, North America on that day did not seem inclined to send on to Europe one of those first-class storms of which it seems to have such an inexhaustible reserve. A better day could not have been chosen for an aeronautic experiment.

Need one mention the immense crowd assembled in Fairmont Park; the trains that poured into the Pennsylvanian capital sightseers from the neighbouring states; the industrial and commercial standstill which allowed everybody to be present at this spectacle: employers, workmen, men, women, old men, children, members of Congress, representatives of the army, magistrates, reporters, natives white and black, all crowded together in that great clearing? Need one describe the noisy emotions of that populace, its unaccountable movements, the sudden jostlings which made the mass heave and swell? Need one count the number of cheers which rose from all sides like fireworks when Uncle Prudent and Phil Evans appeared in the gondola beneath the aerostat and hoisted the American colours? Need one point out that the majority of the inquisitive might have come not so much to see the *Go Ahead* as to gaze on these two extraordinary men of the New World whom the Old World envied.

Why two and not three? Why not Frycollin? Because Frycollin found his trip in the *Albatross* sufficient for his fame. He had declined the honour of accompanying his master. So, he had no share in the frenzied acclamations that greeted the president and the secretary of the Weldon Institute.

Of the members of the illustrious assembly not one was absent from the places reserved within the ropes and stakes which formed an enclosure in the midst of the clearing. There were Truk Milnor, Bat T. Fyn, and William T. Forbes with his two daughters, Miss Doll and Miss Mat, on his arm. All had come to affirm by their presence that nothing could ever separate the partisans of 'lighter than air'.

About twenty past eleven a cannon-shot announced the end of the final preparations.

The *Go Ahead* awaited only the signal to start. At twenty-five past eleven the second gun was fired.

The *Go Ahead*, held by a rope, was about one hundred and fifty feet above the clearing. Thus her gondola dominated the crowd, so deeply moved. Standing in the prow, Uncle Prudent and Phil Evans placed their left hands on their hearts—to signify how deeply they felt at one with all present. Then they extended their right hands towards the zenith—to signify that the greatest of known balloons was upon this very day to take possession of the supra-terrestrial domain.

A hundred thousand hands were then placed on a hundred thousand hearts, and a hundred thousand other hands were lifted towards the sky.

The third gun was fired at half-past eleven.

'Let go!' shouted Uncle Prudent, using the traditional formula.

And the *Go Ahead* rose 'majestically'—an adverb consecrated by usage for all aerostatic descriptions.

It was indeed a superb spectacle, like that of a vessel just launched from the stocks. And was she not a vessel launched into the aerial sea?

The *Go Ahead* rose in a rigorously vertical line—a proof

of the absolute calmness of the atmosphere—and stopped at an altitude of eight hundred feet.

Then she began manoeuvring in a horizontal plane. Driven by her two screws, she moved eastwards at a speed of twelve yards a second. That is the speed of the whale in the midst of the waters. Nor was it unbecoming to compare her to this giant of the northern seas, for she too was shaped like an enormous cetacean. A fresh burst of cheers arose.

Then, under the action of her rudder, the *Go Ahead* went through all the evolutions, circular, oblique, or direct, that her steersman could give her. She turned in a small circle; she moved ahead and astern in such a way as to convince the most refractory disbeliever in the steering of balloons, if there were any. . . ! And if there had been any, he would have been torn to pieces.

But why was the wind lacking from this magnificent experiment? It was regrettable. Doubtless the spectators would have seen the *Go Ahead* unhesitatingly execute all the movements of a sailing-vessel beating to windward, or of a steamer driving in the wind's eye.

At this moment the aerostat rose a few hundred yards.

The manoeuvre was understandable. In order to complete the experiment, Uncle Prudent and his companions were going to try to find some current in the higher zones. A system of cellular balloons—analogous to the swimming bladder in fishes—into which a certain amount of air could be introduced by means of pumps, had provided for this vertical motion. Without throwing out ballast to rise or losing gas to fall the aeronaut was able to rise or sink at his will. There was, of course, a valve in the aerostat's upper hemisphere in case a rapid descent were found necessary. It was, indeed, the application of contrivances already well known, but brought to the last degree of perfection.

The *Go Ahead* then rose in a vertical line. As if by some optical effect her enormous dimensions gradually grew smaller to the eye. The necks of the crowd were almost ricked as

they gazed into the air. Gradually the enormous whale became a porpoise, and then it was reduced to a mere gudgeon.

The ascensional movement did not cease until the *Go Ahead* had reached a height of fourteen thousand feet. But against so pure a sky, without a trace of mist, she remained clearly visible.

However, she remained over the clearing as if she had been linked to it by a wire. An immense bell-glass which had imprisoned the atmosphere could not have deprived it more completely of movement; not a breath of wind was there at that height or any other.

The aerostat manoeuvred without encountering any resistance, her size reduced by the distance, as if she were being looked at through the wrong end of a telescope.

Suddenly a shout rose from the crowd, a shout followed by a hundred thousand others. All hands were stretched towards a point on the horizon. That point was the north-west.

There in the deep azure appeared a moving body, approaching and getting larger. Was it a bird beating its wings in the higher zones of space? Was it an aerolite shooting obliquely through the atmosphere? Anyhow, its speed was terrific, and it would not be long in passing above the crowd.

A suspicion transmitted itself electrically to every brain and swept through the clearing.

But it seemed as though the *Go Ahead* had sighted this strange object. She certainly seemed to fear some danger, for her speed increased, and she sped off towards the east.

Yes, the crowd realized what it meant! A name uttered by one of the members of the Weldon Institute was repeated by a hundred thousand mouths —

'The Albatross! The Albatross!'

It was indeed the *Albatross*! It was Robur who had reappeared in the heights of the sky! It was he who, like a huge bird of prey, was going to fall upon the *Go Ahead*.

And yet, nine months before, the aeronef, shattered by the

explosion, her screws smashed, her air-frame cleft in two, had been annihilated.

Without the prodigious coolness of the engineer, who reversed the gyratory motion of the propeller at the prow and converted it into a suspensory screw, the whole crew of the *Albatross* would have been asphyxiated by the very speed of the fall. But if they had escaped asphyxia, how had they, escaped being drowned in the Pacific?

This was because the remains of the air-frame, the blades of the propellers, the compartments of the deck-houses, all that remained of the *Albatross*, had formed a raft. If the wounded bird had fallen on the waves its wings had kept it afloat. For several hours Robur and his men stayed, at first on the wreck and afterwards in their india-rubber boat, which they had managed to recover from the surface of the ocean.

Providence, for those who believe in divine intervention in human affairs—chance for those weak enough not to believe in Providence—had come to the help of these shipwrecked men.

A ship sighted them a few hours after sunrise, and lowered one of her boats into the sea. She picked up not only Robur and his companions but the floating wreckage of the aeronef. The engineer contented himself with saying that his ship had perished in a collision, and his incognito was respected.

The ship was an English three-master, the *Two Friends*, of Liverpool. She was bound for Melbourne, where she arrived a few days later.

Robur was now in Australia, but a long way from X Island, to which he desired to return as soon as possible.

In the ruins of the aftermost cabin he had found a fairly large sum of money, quite enough to provide for all the needs of himself and companions without applying to anyone. A short time after he arrived in Melbourne he became the owner of a small brigantine of about a hundred tons, and in her, for he was a skilled seaman, he sailed for X Island.

There he had but one fixed idea, one obsession—to be

avenged. But to secure his vengeance he would have to make a second *Albatross*. An easy task, after all, for him who made the first. He used what he could of the older aeronef; the propulsive and other engines embarked with the other debris in the brigantine. The mechanism was fitted with new batteries and accumulators. In short, in less than eight months the work was finished and a new *Albatross*, identical with the one which the explosion had destroyed, as powerful, as swift, was ready to take the air.

When it is added that he had the same crew, and that this crew was enraged against Uncle Prudent and Phil Evans in particular and against the whole Weldon Institute in general, the position will be understood with no need to stress it.

The *Albatross* left X Island in the first few days of April. During this aerial voyage Robur did not want to be seen from the earth, and he travelled almost always above the clouds. Arrived over North America in a deserted part of the Far West, he landed. There the engineer, keeping a complete incognito, learnt with the greatest pleasure that the Weldon Institute was ready to begin its experiments, and that the *Go Ahead*, with Uncle Prudent and Phil Evans, was going to start from Philadelphia on April 29th.

Here was a chance for Robur and his crew to gratify their longing for revenge! A terrible vengeance, from which the *Go Ahead* could not escape! A public vengeance, which would at the same time prove the superiority of the aeronef to all aerostats and contrivances of that nature!

And that is why, on this very day, like a vulture hurling itself from high in the air, the aeronef appeared over Fairmont Park.

Yes! It was the *Albatross*, easy to recognize, even by those who had never seen her before!

The *Go Ahead* was in full flight: but it was soon clear that she could not escape horizontally. So she sought her safety in a vertical direction, not dropping to the ground, for the aeronef would have cut her off, but into the air, seeking a zone

where she might perhaps not be reached. This was very daring, and at the same time very logical.

But the *Albatross* began to rise with her. Although she was much smaller than the *Go Ahead*, it was the swordfish hunting the whale, which it would pierce with its spear; it was the torpedo-boat chasing the cruiser which it would blow up with a single stroke.

This could easily be seen from below, and with what distress! In a few moments the aerostat had attained a height of sixteen thousand feet.

The *Albatross* followed her as she rose. She flew round her flanks. She hemmed her in within a circle with a constantly diminishing radius. She could have annihilated her at a stroke by ripping open her frail covering. Then Uncle Prudent and his companions would have been dashed to atoms in a frightful fall!

The people, mute with horror, gasped for breath; they were seized with that sort of fear which oppresses the chest and grips the legs when anyone is seen to fall from a height. An aerial combat was beginning in which there were none of the chances of safety as in a sea fight—the first of its kind, but it would no doubt not be the last, for progress is one of the laws of this world. And if the *Go Ahead* were flying the American colours, the *Albatross* had hoisted her own flag, the starry bunting with the golden sun of Robur the Conqueror.

The *Go Ahead* tried to out-distance her enemy by rising still higher. She threw away the ballast she had in reserve: she made another leap of three thousand feet, she was nothing more than a point in space. The *Albatross*, which was still following her with her helices rotating at their maximum speed, had become invisible.

Suddenly a cry of terror rose from the crowd. The *Go Ahead* was plainly increasing rapidly in size, and the aeronef reappeared, dropping with her. This time it was a fall. The gas, over-expanded in the high zones, had burst the balloon, which now half inflated, was falling fairly quickly.

But the aeronef, slowing her suspensory screws, was coming down at the same speed. She ran alongside the *Go Ahead* when she was not more than four thousand feet from the ground.

Did Robur want to give her the finishing stroke? . . . No! . . . He wanted to come to the rescue, he wanted to save her crew!

And so clever were his manoeuvres that the aeronaut and his assistant were able to jump on the platform of the aeronef.

Would Uncle Prudent and Phil Evans refuse Robur's help, refuse to be saved by him? They were quite capable of this. But the engineers threw themselves upon them and dragged them by main force from the *Go Ahead* to the *Albatross*.

Then the aeronef glided off and remained stationary, while the balloon, completely emptied of its gas, fell on the trees of the clearing, where it hung like a gigantic rag.

An appalled silence reigned on the ground. It seemed as though life were suspended in every heart. Many eyes had been closed, so as not to behold the supreme catastrophe.

Uncle Prudent and Phil Evans had again become the prisoners of Robur the engineer. Now that he had recaptured them, would he carry them off again into space, where it was impossible to follow him?

It could well be believed.

However, instead of mounting into the sky the *Albatross* continued to descend towards the ground. Was she going to land? So it seemed, and the crowd divided to leave a space for her in the centre of the clearing.

The excitement was at its greatest height.

The *Albatross* stopped six feet from the ground. Then, in the midst of a profound silence, the engineer's voice was heard.

'Citizens of the United States,' he said, 'the president and the secretary of the Weldon Institute are again in my power. In keeping them I am only within my right of reprisals. But from the passion kindled in their hearts by the success of the *Albatross*, I realize that their minds are not prepared for that

important revolution which the conquest of the air will one day bring. Uncle Prudent and Phil Evans, you are free!'

The president and the secretary of the Weldon Institute and the aeronaut and his assistant had only to jump down.

The *Albatross* then mounted to about forty feet above the crowd.

Then Robur continued:

'Citizens of the United States, my experiment is over; but my advice to those present is not to be premature in anything, not even in progress. It is evolution and not revolution that we should seek. In a word, we must not be before our time. I have come too soon today to withstand such contradictory and divided interests. Nations are not yet fit for union.

'I go, then; and I take my secret with me. But it shall not be lost to humanity. It shall belong to you on the day you are educated enough to profit from it and wise enough not to abuse it. Farewell, Citizens of the United States, Farewell!'

And the *Albatross*, beating the air with her seventy-four screws, and driven by her propellers revolving at full speed, shot off towards the east amid a tempest of cheers, which this time were of admiration.

The two colleagues, profoundly humiliated, as indeed was the whole of the Weldon Institute, did the only thing they could. They went home, while the crowd, by a sudden change of front, greeted them with their keenest sarcasms and are sarcastic still.

* * *

And now there arises the question: 'Who is this Robur? Shall we ever know?'

We know today. Robur is the science of the future, perhaps that of tomorrow. He is the forerunner of what is to come!

Does the *Albatross* still cruise in the earth's atmosphere, in the midst of that realm that none can take from her? There is no reason to doubt it. Will Robur the Conqueror appear one day as he declared? Yes! He will come to reveal the secret

of his invention, which will greatly change the social and political conditions of the world.

As for the future of aerial locomotion, it belongs to the aeronef and not to the aerostat.

It is to the *Albatross* that the conquest of the air is definitely reserved.

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